

Oracle® Primavera Unifier

Administration Help



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1

Welcome to Primavera Unifier

Within the documentation, some content might be specific for cloud deployments while other content is relevant for on-premises deployments. Any content that applies to only one of these deployments is labeled accordingly.

Note

The instructions and information presented in the Unifier documentation are based on an out-of-the-box setup and before being customized by the user.

Designing, building, and managing facilities requires extensive collaboration between numerous, often geographically dispersed, disciplines and entities. Throughout the process, from conceptual design to facility operations, access to accurate, up-to-date information is critical to the success of a project and facility.

Primavera Unifier is an integrated platform that optimizes business processes and creates visibility to enable customers to better manage all of the communications and information required to successfully manage a facility throughout the life cycle.

Unifier is a system for managing the flow of information in projects/shells, providing a seamlessly automated and integrated environment across the life cycle of your company's facilities, from planning, design, procurement, construction and into operations and maintenance. It provides real-time visibility across multiple projects/shells to help your company make fast, accurate decisions.

Unifier lets you track and manage information such as budgets, project or shell members, specifications, requests for information, and shared documents. You decide who has access to the information, which team members are allowed to approve changes to the information, and how information flows between people.

Oracle Primavera solutions automate manual processes and pull together information from various point systems typically used on a portfolio of projects/shells. Through Unifier, executives and project or shell team members can better manage all data and business processes in one centralized system, while reducing the reliance on older technologies such as e-mail, fax, and desktop applications.

Unifier was designed from the ground up specifically for the facility owner, based upon our industry domain expertise and knowledge of best practices combined with direct customer input gathered over decades of client interaction. The result is a robust set of capabilities with an intuitive, easy-to-use interface. Primavera Unifier enables leading owners and operators to increase enterprise efficiencies, reduce project and operating costs, enhance visibility, and improve time-to-market.

2

Getting Started with General Administration Guide

Within the documentation, some content might be specific for cloud deployments while other content is relevant for on-premises deployments. Any content that applies to only one of these deployments is labeled accordingly.

The *Unifier General Administration Guide* explains how the Company Administrator should use the general options that are available in **Admin** mode.

Note

The instructions and information presented in the documentation are based on an out-of-the-box (OOTB) setup and before being customized by the user.

Depending on permissions, among other tasks, the Company Administrators can:

- Create or modify projects
- Create data definitions for custom attributes on BP forms
- Activate business process schemas
- Define record numbering schemas
- Create users and groups and grant their permissions
- Set up templates
- Add currencies

For more information, see [Administrators](#).

Access to functionality is granted through permissions.

A Company Administrator can set permission from the following modules:

- **Access Control**
- **Company User**
- **User Administration, Groups** sub-node
- **Standards & Libraries, Permission Templates** sub-node

The ability to utilize a specific function depends on permissions settings granted by the Company Administrator, set in **Admin** mode.

There are two modes of operation:

- **Admin (Administration) mode:** The Company Administrator works in **Admin** mode to set up, for example, company and shell properties, user permissions, templates for major features, data structures, and configure and set up business process (BP) workflows.

- **User mode:** Users spend most of their time in **User** mode. User mode allows users perform the day-to-day activities, collaborate through business processes and Mailbox, maintain, for example, the Cost Manager, Activity Manager, and Document Manager, and run reports.
User Help explains how to use the options that are available in **User** mode.

You can switch between modes using the mode icons (**User** mode  and **Admin** mode ). These options are not available for the **Home**  tab.

 Note

On touchscreen-enabled devices, the close button (x) is displayed for every page or tab in the location bar at the top of the application, instead of being displayed only for the active page or tab.

Using Artificial Intelligence (AI) Features

Variability of Summaries Generated by AI

Because of how AI large language models (LLMs) function, the summaries generated might vary, even when you generate summaries using the same input data and output options. The AI model makes billions of probabilistic choices when generating text, similar to how a human might rephrase the same idea between different conversations. This approach is by design, with the intention of making the summaries feel natural and dynamic, rather than repetitive and stale. While the wording, ordering, and formatting might vary between summaries, Oracle expects that the core information and accuracy is correct.

Translation of International Data Generated by AI

When the data submitted for summarization is in a language other than English, the model first performs a translation to derive meaning. It then generates the summary in English, leveraging its capability for natural language generation (NLG). This approach provides cohesive summaries of the information, regardless of language.

However, it is important that you are aware of the inherent limitations of machine translation, particularly when it involves technical or domain-specific information. The AI feature relies on patterns learned from vast datasets, but it can occasionally struggle with highly specialized terminology, jargon, or cultural nuances that are not well-represented in its training data. This can lead to inaccuracies or a loss of precise meaning. For this reason, Oracle does not guarantee the accuracy of the summaries when the original data contains languages other than English.

3

Security Considerations

For any company that deals with sensitive data, keeping it secure is crucial to success. While hosting Unifier data on the Oracle Cloud provides security measures, it cannot do everything. For example, it cannot prevent phishing attempts or other attacks that exploit gaps in its users' security awareness. That is why it is important for everyone who works with Oracle Primavera Unifier, whether hosted on-premises or on the Oracle Cloud, to understand what they can do to keep data secure.

Who this information is for

This guide and the *Unifier Integration Interface Guide* contain comprehensive information on administrative features, including those related to security.

This section is for anyone who uses, manages, or is just interested in the system. If you are a security expert or administrator, this is a good place to start. It should help you see the big security picture and understand the most important guidelines related to security in Unifier.

For further information on configuring your on-premises Unifier environment securely, refer to the *Unifier Security Guide for On-Premises*.

Some Security Basics

We use the term administrator to refer to anyone who is responsible for managing a company's data and who can access that data. For our purposes, administrators includes a wide variety of IT professionals, from those who define roles in the Primavera Unifier application to those who manage company servers.

An end user is anyone who uses Primavera Unifier to do their job. This includes project managers, subcontractors, general contractors, and everyone else who logs into Primavera Unifier from an office or jobsite to get their work done.

Administrators

- Set up Single Sign-On (SSO) and enable multi-factor authentication to minimize the number of passwords that users have to remember and to consolidate risk.
- Educate users on how they can avoid unwittingly helping hackers. One of the best ways application administrators and security advocates can help users is by helping them to prevent security breaches.
- Use a VPN to encrypt data being sent over the internet.
- Stay up to date about security trends and best practices.

End users

- Follow security guidelines created by their companies and the administrators of any network applications they use.
- Use strong passwords. The more random-looking the better, and avoid reusing passwords.
- Learn to recognize phishing. Phishing is when someone disguises an email or some other transmission as a legitimate message in an attempt to get a user to reveal sensitive information. For example, a hacker may send you an email disguised to look like an email from your employer requesting login information. These attacks are becoming more

sophisticated, but you can still protect yourself by making sure any emails you receive or websites you visit are legitimate before using them to share sensitive information.

Authentication: How Users Sign On

Authentication refers to the way users sign on.

If possible, administrators should implement Single Sign-on (SSO).

SSO reduces the number of passwords the users must remember. It can also be used to enable multi-factor login, which is when users are asked to provide some verification in addition to their passwords, like a code that they receive via text or email.

Note

For Unifier On-Premises customers, the system only supports integration with the Oracle Identity Manager.

To learn how to change the authentication settings, refer to "Authentication Options for Primavera Unifier" in the *Unifier Security Guide for On-Premises*.

Authorization: What Users Can Access

Authorization refers to what users can access. The authorization to use the system is based on permissions. The administrator manages permissions. The administrators must carefully grant permissions to all appropriate users.

Administrators: There are different types or levels of administrators, and they have various responsibilities, including (but not limited to) the end-to-end administration of Unifier.

Permissions: Unifier offers a flexible yet powerful permission-based security system, as opposed to role-based security. Role-based security by definition limits the user to a fixed set of functions or tasks. With permission-based security, access to all modules, functions, and tasks are controlled by granting each user any combination of permissions. These permissions consist of the ability to access specific tasks and to perform specific actions within those tasks, such as create, modify, and view.

Permissions are granted to **Users**, or to **Groups**, to allow them access to features or functionalities.

Users: Individuals who use a functionality, if they have the permission granted to them to do so, by the administrator.

Groups: The **Groups** option makes it easier for the administrators to assign permission sets to multiple users (a group of users) at the same time. The administrators can use **Groups** to group users who will be using the same functionality, and assign the same permissions to all users in the group. Anytime a new person comes onto the project or shell, the administrator can assign the new person to a group, and the new person's permissions will be set automatically.

Specific permission settings are described Permission Settings.

Endpoint Security

From laptops to cellphones, organizations have to keep track of data on more devices than ever, and more devices means more risk. It is important to implement Enterprise Mobility Management (EMM) tools and policies.

Inherent Risks and Practical Policies

No automated security system or protocol can make a system fully secure if those with legitimate access exploit it for illegitimate purposes or if a device falls into the wrong hands. Here are some general "common sense" guidelines you should follow when it comes to endpoint security:

Use good mobile device management (MDM) software.

MDM systems can help your organization secure the devices where its sensitive data might end up.

Grant security permission conservatively.

Do not give everyone permission to everything just to avoid perceived complexity. Remember, one breach can be many times more costly and time consuming than setting and following standard security protocols.

Organize permission sets and credentials so they can be edited quickly.

Keep user groups and their permissions organized and easy to manage. Use descriptive names for permission sets, and organize them logically to make it easier for you or anyone else to manage them quickly and confidently.

Keep up with organizational changes.

If a user no longer needs access to a part of the app, for whatever reason, update that user's permissions accordingly.

Use timeout settings.

Administrators can limit how long mobile applications and APIs remain connected to the server after a user signs in. For more information, see [Unifier Mobile Application](#).

Confidentiality

Confidentiality ensures that only the authorized users see the stored and transmitted information. In addition to the documentation included with other applications and hardware components, follow the Unifier-specific guidance below.

- For data in transit, use SSL/TLS to protect network connections among modules. If you use SSO authentication, ensure that you use LDAP to connect to the directory server.
- For data at rest, refer to the documentation included with the database server for instructions on securing the database.

Integration with Other Applications

The ability to connect and exchange information with other apps is powerful, but it also presents some potential security issues that administrators must manage. It is important to understand which data flows between applications to ensure compliance with policies and regulations related to security and privacy.

For more information on integration, refer to the *Unifier Integration Interface Guide*.

Security for Developers - API Security

With APIs, developers can use some of the data and functionality of Unifier outside of the limitations—and relative safety—of the Unifier environment. This opens many possibilities. But as with any situation where data can move in potentially unpredictable ways, it presents risk. For more information on integration, refer to the *Unifier Integration Interface Guide*.

Establishing Security Contacts

While the apps used by your organization may have some security features of their own, most security issues ultimately come down to the people who use them. When your company establishes its security procedures, it is important to also establish in-house security experts to whom other members can turn when they have security questions. Security points of contact should be continuously learning about security trends and how they can educate users to keep their data and network secure. Security contacts should also routinely update and maintain protocols that suit the security needs of their organizations.

4

Signing In the First Time and Confirming the Base Currency

When your Test or Development environment is first provisioned, a Base Configuration Package is installed. This package contains the essential attribute forms, a single-instance shell, and a multi-instance shell, which creates a basic framework that you can use to build your own customized configurations. At the time of company creation, the first time that you sign in to a Test or Development environment, an alert regarding the Base Configuration Package appears only if it was not successfully imported. If the package was successfully imported, the Select Base Currency dialog box appears.

If additional packages were installed in your Test or Development environment and the import failed due to issues such as duplicate shell names, an error message is displayed. If other issues occur, such as a design was imported for which the version labeling matches the existing design, a warning message is displayed. Provided that the Base Configuration Package installed successfully, you can view any additional messages by going to the **Company Workspace** and switching to **Admin** mode, selecting **Configuration Package Management** in the left Navigator, and then selecting **Configuration Packages**.

The Base Currency is the default currency used by the company. Although it might be set by Oracle when the system is first provisioned, the Base Currency must be selected the first time that the Company Administrator signs in. No other users are allowed to sign in until the Company Administrator sets the Base Currency. Because the type of currency plays a large role in nearly all financial functions, the Base Currency cannot be changed after data has been entered into the system.

To sign in the first time:

1. Sign in to the system as the Company Administrator.
2. If a **Re-import Base Configuration Package** alert appears for a Test or Development environment, select the applicable option:
 - To initiate the import process again, select **OK**. When the process completes successfully, you can set the Base Currency and continue the configuration process.
 - To prevent the import process from running again, select **Cancel**. If you select Cancel, the login page is displayed. Until the import process is completed, you cannot sign in, set the Base Currency, and continue the configuration process.
3. When the **Cookies in Unifier** notification appears, select **Got It** to continue.
4. In the **Select Base Currency** dialog box, select a currency from the list, and select **Save**.

Note

If you select Cancel or X (close), no changes are saved and the login page is displayed.

5. In the **Confirmation** message, select **Yes** to accept your selected Base Currency or select **No** to select a different Base Currency.

After you set the Base Currency, the system updates the Event Audit Log with all relevant information, such as the date on which the Base Currency was confirmed and the name of the Company Administrator who confirmed it.

5

Companies

The following describes the company types used within the system:

- **Owner Company (also referred to as the Sponsor Company):** The entity that engages in business and has complete control (or ownership) of the application. An Owner Company (Sponsor Company), commissions shells. Shells are created under the Owner Company.

Note

Shells are a collaboration space allowing users to coordinate efforts during the execution of a project.

A Sponsor Company may have one, many, or no partners.

- **Partner Company:** A Partner Company is a consultant, a contractor, or a vendor company that is associated with a Sponsor Company. A Partner Company may work with the Sponsor Company on all, or only some, of the Sponsor Company shells.
- **Member Company:** When a Partner Company participates in a project or shell, the Partner Company becomes a Member Company, and the Partner Company users that are added to the project or shell become the Member Company users. Additionally, if a Partner Company user is added to a project or shell, the system verifies that the user's company is a Member Company; if not, the system adds the Partner Company.

Note

- Project and shell access is limited to the users (including Sponsor Company users or Member Company users) who are chosen for the project or shell and permissions are configurable for each company.
- When a Member (also known as Partner) Company is removed from a project or shell, the Member Company users are automatically set to Inactive.

The application lets you add a Partner Company or Member Company to enable project users to collaborate on (and coordinate) the execution of a project.

6

Administrators

Note

The following information is based on the default settings and typical use of the system.

There are different types, or levels, of administrators and they include:

- Site Administrator (also referred to as the System Administrator)
- Company Administrator
- Project or Shell Administrator

The following explains each administrator type in detail.

Site Administrator (also referred to as the System Administrator)

A Site Administrator is responsible for the end-to-end administration.

Note

For cloud customers, the Oracle Primavera Technical Team performs the Site Administrator function. For on-premises customers, the customer performs the Site Administrator function.

The Site Administrator's tasks include:

- Loading modules.
- Loading certain system reports.
- Managing the License Manager.
- Performing basic system administration tasks, including unlocking locked user accounts.
- Performing Company Administrator and Project or Shell Administrator functions, if requested.
- Changing the Authentication Key.

Company Administrator

Generally, a Company Administrator administers the Owner Company (Sponsor Company) functions. For more information about an Owner Company, see [User Administration](#).

The Company Administrator can also perform user tasks.

Note

Except where noted, the Company Administrator cannot perform tasks designated for the Site Administrator.

A Company Administrator typically performs the following tasks, depending on the permission:

- Creating multiple Partner Companies in the Owner Company.
- Creating users for each Partner Companies in the Owner Company.
- Managing the company properties, including Company Information, Company Settings, and Company Workspace.
- Managing company-level users, groups, and granting permissions.
- Managing Partner Company (or Member Company) status.
- Managing Partner Company (or Member Company) users.
- Creating cross-project or cross-Shell reports.
- Creating and maintaining Data Definitions (DDs) and Data Elements (DEs).
- Activating a Business Process schema.
- Defining record numbering scheme.
- Defining the company exchange rate and currencies.
- Creating shells.
- Managing project organization (categories) and shell organization (types).
- Setting up templates.
- Setting up and managing data structure.
- Configuring the User mode Navigator (see [Configuring the User Mode Navigator](#)).

In the system, you can have multiple company administrators.

The Company Administrator group, which can contain multiple company administrators, is automatically created when the Owner Company (Sponsor Company) is created.

This Company Administrator group has preset permissions. You can change permissions as needed.

Examples

- If new business processes are added.
- If new modules are added.
- If the Company Administrator assists in administration of other modules such as shells.

Project Administrator and Shell Administrator

Project and Shell Administrators manage project- and shell-level administration tasks. A project or shell administrator adds existing users to projects and shells and project and shell groups; restricts access within specific projects; sets up the project and shell cost, funding, Schedule of Value (SOV), or schedule sheets; and sets up business processes. Project and Shell Administrators typically:

- Administer shells they are a member of

- Add project and shell users, create groups and grant permissions
- Create and modify the Cost Sheet
- Create Business Process Setups and define workflows

To access company administration functions, see [Company Workspace Landing Page \(Admin\)](#).

Assigning Access Control for Administrators of Company Information and Company Settings

To set permissions for administrators of the **Company Information** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **Company Information**.
4. In the **Permission Settings for: Company Information** dialog box, use the **Add**, **Modify**, and **Remove** options to make the applicable changes.
For example, you can add users and groups. For the **Company Information** node, you can assign the **Modify** permission, which automatically grants the **View** permission. For the Company Settings node, you can assign the **Modify** permission, which automatically grants the **View** permission, or assign only the **View** permission.

Note

The Company Information node assigns View permission for all users by default.

7

Permission-Based Security

The application offers a flexible yet powerful permission-based security system, as opposed to role-based security. Role-based security by definition limits the user to a fixed set of functions or tasks. With permission-based security, access to all modules, functions and tasks is controlled by granting each user any combination of permissions.

Some areas of the system, such as the **Company Information** node, include **View** permission for all users by default.

For ease of use, you can set permissions for both individuals and for groups of users. You can even copy permissions from one user to another and then make modifications.

A user may belong to any (or all) of the administration groups and perform functions as a company, project, or shell administrator. Company Administrators generally have project and shell permissions and may or may not work within the specific shells. You may want a project or shell administrator to have the ability to perform some company administrator functions, such as creating a project or shell. Creating different types of user permission templates will help you grant access more easily to different staff members, whether they are administrative staff, engineers or architects, managers, vendors or subcontractors, IT personnel, and so on.

Use default permissions as a guideline, but your users' actual permission settings will depend on your organization's needs.

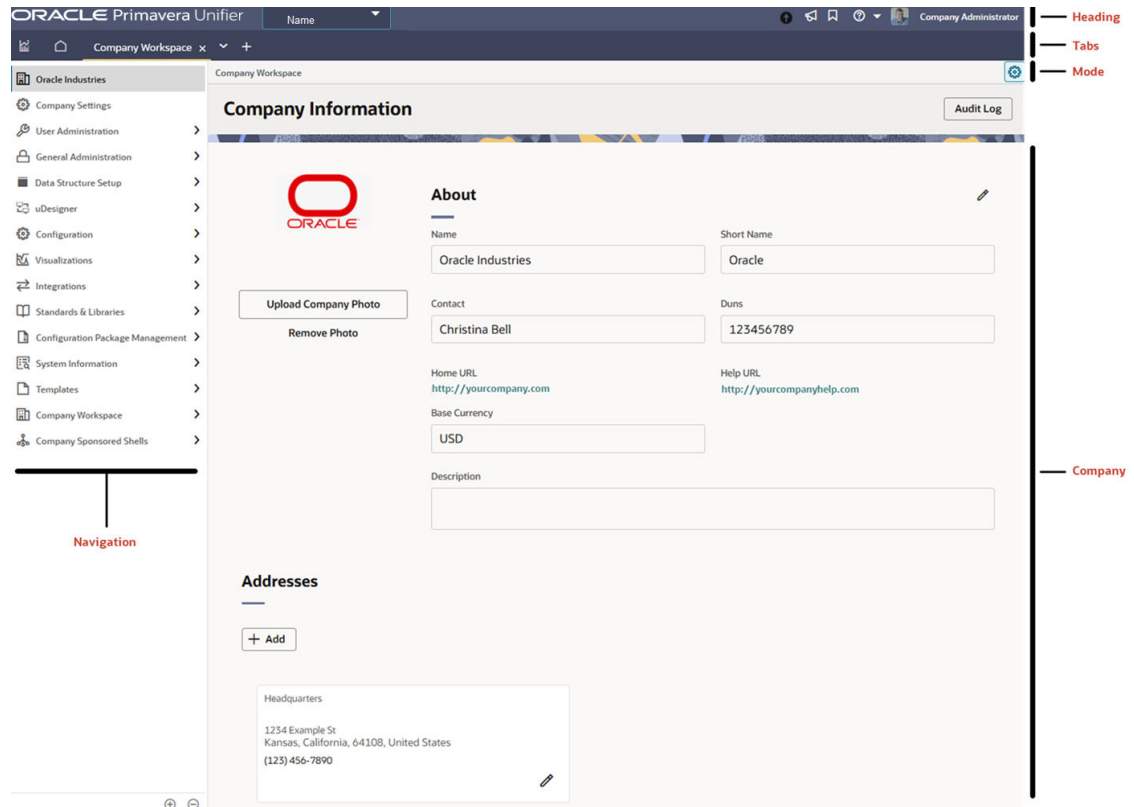
Depending on what you are setting up or configuring, such as users, groups, projects/shells, business processes, and so on, there are different permissions that might be available for selection. Some (this is *not* a comprehensive list) of these permissions include:

- Create
- Full Access
- Modify Status
- Modify Properties
- View
- Allow Bulk Edit
- Configure User Dashboard
- Allow Quick Calendar Entry
- Hide Audit Log
- Organize
- View All Sheets

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Company Workspace Landing Page (Admin)

When you go to your **Company Workspace** tab and select your company name (Oracle Industries in the following example), the system displays the company landing page, which includes the **Company Information** page, as shown below:



The company landing page has a heading that displays the Primavera Unifier logo and enables to access the following:

- **Switch Applications** (📁): Lets you switch to other applications that are linked to Unifier. For more information, see Access Other Smart Construction Platform Applications.
- **Announcements** (📢): Displays a log of recent announcements.
- **Bookmarks** (📌): Displays all bookmarked locations.
- **Configuration Packages** (📦)



): (Only visible for an Owner Company [also referred to as the Sponsor Company]) Displays the Configuration Packages window in Development and Test environments, which explains how to download the available packages and provides access to the ZIP files.

- **View Help menu** (

If you have login access to multiple tenants, a drop-down arrow appears next to your name (**Name** in the preceding example), which lets you switch tenants.

Below the heading, the tab row lets you go to the **Analytics** tab ( (depending on your permissions), **Home** tab () , **Company Workspace** tab, and shell tabs. You can close all the tabs except the **Home** tab. You can select **New tab** () to open a window that lets you search for company or shells by:

- Opening all locations and searching, for example, in all projects, all properties, or buildings.
- Opening the company or shells that are displayed (categorized under: Recent Locations, Key Locations, and Bookmarks).

Below the tabs row is the mode row, which lets you switch the mode of operation from **User** mode () to **Admin** mode () or reverse.

On the **Company Information** page, you can view information such as the full and short name of the company, the applicable Uniform Resource Locators (URLs), the Base Currency, and various addresses. See [Company Information](#).

On the left side of the company landing page, the navigation (left Navigator) grouping nodes and functional nodes are displayed. The following topics explain each grouping and functional node in the Company Workspace landing page (**Admin** mode).

Note

You can select a grouping node to expand it and access the functional nodes that are associated with that grouping node. In some instances, some of the items under the grouping nodes are considered sub-grouping nodes which have their respective functional nodes, also known as leaf nodes.

Company Information

The **Company Information** grouping node displays information about your organization. If you have the applicable permissions, you can update some fields on this page. See [Updating Company Information](#).

- **Status:** (Read-only) If you are signed in as a Site Administrator, a label, such as **Active** or **Inactive** appears next to the **Company Information** label.
- **Activate/Deactivate Account:** If you are signed in as a Site Administrator, an option to activate or deactivate the company appears in the upper-right corner.
- **Audit Log:** Displays a record of changes made, the date the change was processed, and the name of the user that made the change. Lets you search through and print the log.
- **Company Photo:** Displays a picture for the company, such as the company logo.
- **About**
 - **Name:** Displays the name of your company.
 - **Short Name:** Displays the short name of your company.

- **Contact:** Displays the first and last name of the person to contact within your company, such as the name of the Company Administrator.
 - **DUNS:** Displays the Data Universal Numbering System (DUNS) number assigned to your company.
 - **Home URL:** Displays the main Uniform Resource Locator (URL) for your company.
 - **Help URL:** Displays an additional URL to point to internal documentation regarding company policies or practices, an intranet site, or other internal information.
 - **Authentication Key:** (Read-only) If you are signed in as a Site Administrator and a key was provided when the company environment was configured, displays an encoded entry.
 - **Base Currency:** Displays the default currency used by the company. Although it might be set by Oracle when the system is first provisioned, the Base Currency must be selected the first time that the Company Administrator signs in. No other users are allowed to sign in until the Company Administrator sets the Base Currency. Because the type of currency plays a large role in nearly all financial functions, the Base Currency cannot be changed after data has been entered into the system. See [Base Currency Confirmation](#).
 - **Description:** Displays information that describes your company, such as its line of business.
- **Addresses:** At a minimum, displays the default company address.

Company Settings

The **Company Settings** grouping node displays additional information about your organization. If you have the applicable permissions, you can update some fields on each tab for this page. See [Updating Company Settings](#).

- **Audit Log:** Displays a record of changes made, the date the change was processed, and the name of the user that made the change. Lets you search through and print the log.
- **General**
 - **Shells:** Based on the setting in this field, the labels change in the following areas: top navigation tabs, breadcrumbs, the first (top) left menu node (Home node) for the project or shell, and bookmarks.
 - **Dashboard:** Displays a check mark if enabled. If **Hide tabs in Company Dashboard** is selected, only the **Company Workspace** is displayed.
 - **Bid Management:** Displays the account name of the user who will be managing the bids that your company receives.
 - **User-defined Reports:** Displays the maximum number of user-defined reports (UDRs) that can be created.
 - **Emails:** Displays the size of attachments that can be included on an outgoing email.
 - **Sheets**
 - * **Activity Sheets:** Displays the URL fields for linked P6 and Oracle Primavera Cloud sources.
 - * **Cost Sheets:** Displays a check mark if enabled. If **Override column restrictions** is selected, users can view and edit a cost sheet column if they have the applicable permissions.

- **Security**
 - **Files:** Displays file restrictions, such as size limit and permitted file types (extensions).
 - **Hyperlinks:** Displays custom Uniform Resource Identifiers (URIs) that can be used by your company. For example, FTP.
 - **User Profile:** Indicates whether information associated with a user profile should be hidden and whether profiles can be saved for offline use with Unifier Mobile.
 - **Proxy Login:** Indicates whether a Partner User can add Owner Company Users as Proxy users.
 - **IP Allowlist:** Indicates whether API access is permitted, and, if so, from which protocols and unique IP addresses.
 - **Password Policy:** Displays the password guidelines, such as minimum and maximum length, and policies, such as whether to use the same guidelines for bidders.
 - **Support**
 - **Support Contact:** Displays information for your company's internal support.
 - **eLearning Access:** Displays information for your company's internal eLearning environment.
 - **Oracle Guided Learning:** Displays online help deployment information. If you have a subscription, you can use your own content. Otherwise, the system displays Oracle-supplied content by default.
 - **AI (Cloud only)**
 - **Records Summarization:** Indicates whether **Records Summarization** is enabled for business processes (BPs), and, if so, whether only for Company Users or for Company Users and Partner Users.
- Note**

While you can use this option to make **Records Summarization** available, additional steps must be completed to configure and enable summarization for each supported BP before users can access the option. For more information, see *Configuring Business Processes and Business Processes with AI Features Enabled (Cloud Only)*.
- **Task Assist and Progress Guide:** Indicates whether the features are enabled for workflow BPs.
 - **Lobby:** (MT Cloud only) Lets you manage the list of users who can function as administrators for Construction and Engineering Lobby.

User Administration

The **User Administration** grouping node contains the following functional nodes:

- **Partner Companies:** An Owner Company (also referred to as a Sponsor Company) might work with one or more Partner Companies (for example, subcontractors, vendors, and so on) to work on projects/shells or company-level activities. Use this functional node to grant Partner Company users access to specific company-level and project/shell-level features.

- **Company Users:** Company users are the main users that will have access to the system and your company's functions. Use this functional node to grant Company users access to specific company-level and project/shell-level features.
- **Partner Users:** Partner users are members of Partner Companies that can be given permission to access the system and specific company functions. Use this functional node to grant Partner users access to specific company-level and project/shell-level features.
- **Groups:** Use this functional node to create and manage groups, such as Project Administrators. You can also specify the applicable Permissions for the group and manage the group membership.
- **Task Reassignment:** Use this functional node to access comprehensive lists of active tasks currently assigned to active and inactive users. Using the **Task Reassignment - Active User Tasks** and **Task Reassignment - Inactive User Tasks** logs, you can reassign individual tasks to other active users.
- **Integration Users:** Integration users can perform integration, using external programs to import data into the system. Use this functional node to grant Integration users access to run requests related to Representational State Transfer (REST)ful services, such as Workflow Business Process Permissions.
- **Access Control:** Use this option to see the users and groups who have access to each module (access range is from Admin mode to User mode, including the individual modules or managers), to see the permission settings, and to change the permissions.

General Administration

The **General Administration** grouping node contains the following functional nodes:

- **Announcements:** Lets you create announcements and indicate who should see the announcement—users, bidders, or both.
- **License Manager:** Displays the number of licenses allocated to each user type, such as Standard, as well as the current number of active users. Also provides access to the License Terms option in which you can enable alerts regarding the level of consumption.
- **Consent Notice**
 - **User Consent:** Lets you create and enable consent notices that require each user to accept or reject acknowledgment of the notice on the first login occurrence.
 - * **Consent Status:** Lets you track the status of each recipient's response.
 - **Bidder Consent:** Lets you create and enable consent notices that require each bidder to accept or reject acknowledgment of the notice on the first login occurrence.
 - * **Consent Status:** Lets you track the status of each recipient's response.
- **Customer Support Logins:** Lets you view the name and contact information for those identified as customer support. You can also see when each customer support person last logged in and out.

Data Structure Setup

The **Data Structure Setup** grouping node contains the following functional nodes:

- **System Modules:** Lists the various modules (grouping nodes and functional nodes) that provide system functionality.

- **Data Cube Definitions:** Lets you view and create queries for extracting data and displaying it on dashboards.
- **Data Definitions:** Lets you view and update the values and labels assigned to the **Basic**, **Cost Codes**, and **Data Picker** categories of data. Additional information might include the data type, data size, data source, how it is entered, and so on.
- **Data Elements:** Lists the Data Elements defined for your environment. A Data Element is a field, and it is defined by using a Data Definition. A Data Element consists of a name and label, and it might be a text box, a menu, a checkbox, and so on.
- **Data Indexes:** Lets your database administrator (DBA) or Oracle Cloud Administrator create user-defined indexes that speed up the performance of large data sets. For more information, contact your DBA or Oracle Cloud Administrator.
- **Data Views:** Lets you create and deploy SQL data views that can be used as a data source for custom reports, user-defined reports (UDRs), and Data Cube Definitions.
- **Dynamic Data Sets:** Lets you view and update a list of data sets that control what other data elements display or how they behave. For example, you can use a data set to control how checkboxes behave when a user has multiple-choice options.
- **Reports:** Lets you view a list of the **Custom** and **System** types of reports that were loaded by your Site Administrator.
- **Statuses:** Lets you view a list of the following types of status that were loaded by your Site Administrator. The status indicates the state of a line item or record, such as approved or pending, at any point in the business process.
 - **Asset Statuses**
 - **Line Item Statuses**
 - **Record Statuses**
 - **Tags**
- **ER Views:** (Entity Reference [ER]) Provides a list of modules and a corresponding tabular view of the Data Elements and Data Definitions for each.
As a UDR developer, you can view the task's **Action Date** column information in the **visit_date** column of the **sys_task** schema.

uDesigner

The **uDesigner** grouping node contains the following functional nodes:

- **Business Processes:** Displays a list of the Business Process templates.
- **Activity Manager:** Displays a list of activity, OBS, and WBS sheets (the activity manager components).
- **Configurable Modules:** Displays a list of configurable managers, including their description, type, and other related information.
A configurable manager is a manager that has been especially created for your company. Up to 25 managers can be created to consolidate and monitor any entities you want. Configurable managers differ from the managers that are shipped with the system in that configurable managers can roll up not only currency amounts, but also quantity amounts.
You can design two kinds of managers: Code and Records-based and Code-based.
 - A **Code and Records-based** manager employs both codes to create a tracking sheet and records of individual items.

- A **Code-based** manager employs only a sheet to keep track of the values it is monitoring.

From a **Code and Records-based** manager, you can drill down from the sheet to individual items; from a **Code-based** manager, you cannot.

- **Cost Manager:** Displays a list of the cost-related attributes.
- **Document Manager:** Displays a list of the folder- and document-related attributes.
- **Planning Manager:** The Planning Manager is where users can plan for new projects and proposals and create forecasts for those projects that are already running in the system. They cannot administer planned projects the way they administer real projects in the system; however, they can manage the planning phases for these projects as business processes using the same functions used by other business processes.
- **Space Manager:** Displays a list of space-related items, their owners, status, level, type, and other related information.
A space is an entity—such as a cubicle, office, or conference room—that resides on a level in the Space Manager.
- **Shell Manager:** The Shell Manager is where uDesigner users create the shell types that will be used in the system. Administrators group shells into hierarchies, create shell “instances,” and specify what functions and features will be included in the shell, such as a cost manager (standard or generic), Document Manager, and so on.
- **User Administration:** Displays a list of the user attributes, including logs and pickers, their owners, status, level, type, and other related information.

Configuration

The **Configuration** grouping node contains the following functional nodes:

- **Business Process:** Displays a log of the Business Processes that have been imported and lets you update their configuration settings.
- **Document Manager:** Lets you configure views for the Folder and Document Attributes log.
- **Planning Manager:** The **Planning Manager** is where users can plan for new projects and proposals and create forecasts for those projects that are already running in the system. They cannot administer planned projects the way they administer real projects in the system; however, they can manage the planning phases for these projects as business processes using the same functions used by other business processes.
- **Portfolio Manager:** Lets you configure the scenarios that should be analyzed by each portfolio component.
- **Resource Manager:** The **Resource Manager**, which was deprecated starting with version 23.10, is where users can set up and manage a company's personnel resources. These resources are always maintained at the company level, to be distributed among the company's projects.
The Resource Manager classifies job functions into roles that can then be allocated to projects. These roles are used to define billable rates, which are used in budgeting, and can also be used in planning for resource demands across projects. Roles are associated with personnel resources—the people who can perform these roles in a project. The Resource Manager is where users assign personnel to roles and projects.

The Resource Manager manages timesheets, and also hard and soft resource bookings using a calendar that shows what projects a resource has been booked for, as well as the resource's availability.

- **Shell Manager:** Lets you update configuration settings for shell types, such as project number, cost codes, and status.
- **Space Manager:** Displays a list of configured space items, their level, status, and ID.
- **Custom Templates:** Lets you create and update Oracle Analytics Server-based Custom Reports and Custom Prints.
- **Navigation Tabs:** Lets you view the order in which the tabs for the Company Workspace and each shell are displayed in the tabs row. Also lets you rename the Company Workspace tab and the Organization and Test shells.
- **User Mode Navigator:** Lets you update the appearance and organization of the modules and business processes that are available in the left Navigator for all company users.
- **Landing Page:** Displays the available landing pages, their type, status, and other related information.
- **Internationalization:** Lets you view a list of translated content for customized strings and rename data element labels and other system strings by updating the English column. In addition to the translated items provided with the system, you can provide users and groups with translation privileges with the option of viewing translations or configuring them.
- **Material Inventory Manager:** Displays an inventory list of the materials at the project/shell level.
The Material Inventory Manager is a Project/Shell level Code and Record-based type manager.

If you are using a Code and Records-based configurable manager, there are sheets and classes (for example, Sheets and Material Inventory Manager).

- To access a sheet, select the Sheets node, and select a sheet from the log.
- To access a class, select a class. The log for the class opens.

If you are using a code-based configurable manager, there is just one sheet, which is listed under the log (for example Parts Manager).

Visualizations

The **Visualizations** grouping node contains the following functional nodes:

- **Data Sources:** Use this node to create data sources that can be used for visualizations.
- **Content:** Use this node to create different types of content, such as pivot grids, tables, charts, and so on, which can be used in data visualizations.

For more information, see the *Unifier Visualizations Administration Guide*.

Integrations

The **Integrations** grouping node contains the following functional nodes:

- **Acrobat Sign:** Use this node to configure account settings for Adobe Acrobat Sign and select a default system for e-signatures. See [Selecting and Configuring a Default System for E-Signatures](#) and see the *Unifier Adobe Sign Configuration Guide*.
- **Analytics:** Use this node to define data mapping between Unifier data sources and Primavera Analytics subject areas. See [Unifier and Primavera Analytics](#).

- **Bluebeam:** If Bluebeam is enabled for your environment, use this node to configure the information that is tracked throughout review sessions. See the *Unifier Bluebeam User Guide*.
- **DocuSign:** Use this node to configure account settings for DocuSign and select a default system for e-signatures. See [Selecting and Configuring a Default System for E-Signatures](#) and see the *Unifier DocuSign Configuration Guide*.
- **Event Notifications:** Use this node to view events triggered by steps reached within business processes (BPs). See [Event Notifications](#).
- **Gateway:** Use this node to view information about specific objects within Unifier and whether communication with other objects has been enabled. See [Unifier and Primavera Gateway](#).
 - **Business Objects:** Use this node to view a list of the objects that are available in your environment. See [Business Objects Node in Unifier](#).
- **Primavera Cloud:** Use this node to integrate Cash Flow between Unifier and Oracle Primavera Cloud. See [Unifier and Oracle Primavera Cloud](#).
- **Oracle Integration Cloud:** If you are using Oracle Primavera Cloud and Oracle Integration, use this node to integrate Schedule data between Oracle Primavera Cloud and Unifier. You can also update workflow BPs, the System Activity Sheet, and the Master Rate Sheet. See [Unifier and Oracle Integration](#).

Standards & Libraries

The **Standards & Libraries** grouping node contains the following functional nodes:

- **Calendars:** Lets you create multiple calendars, which supports using a library of calendars that can be selected for use at the company, shell, and project levels and accounts for holidays and other non-working days in a range of locales.
- **Cash Flow:** The Cash Flow feature is a way to view a time-based record of income and expenditures, which can be presented in tabular or graphical format. It enables users to create a baseline for project expenditures, track actual costs, and calculate future expenditures based on a known forecast or calculate from trends compared to “Baseline” curves. The Cash Flow node consists of the following functional nodes:
 - **Data Sources:** Lets you define budget sources and curve types, and customize the display and order for graphical elements.
 - **Distribution Profiles:** Lets you create and manage profiles that can be used for the display of cash-flow graphics.
 - **Templates:** Lets you create and manage templates used in the display of cash-flow graphics.
- **Currencies:** Use this node to create and manage different currencies to suit business requirements.
- **Exchange Rates:** Use this node to create and manage the exchange rates for different currencies.
- **Permission Templates:** Lets you create templates for permission sets that you can subsequently apply to individual users or to group.
- **User Preference Templates:** Lets you create templates for a default set of user-based preferences that you can subsequently apply to existing users and to new users.

- **Approved Email List:** In addition to the dedicated company email address that was originally specified for your company, use this node to create and manage project/shell-specific identifiers that are used in conjunction with the company email. You can also specify additional email addresses that are approved for use within your organization.
- **Period Structure:** Use this node to define and manage time periods that support cost calculation for budgets used in cash flow and portfolio management. The default setting is monthly, but you can define alternate periods such as different fiscal years, quarterly periods, twice yearly periods, and so on.
- **Seasonal Dates:** Supports work-order management for preventive maintenance.
- **P6 Data Sources:** Displays a list of P6 data sources. The **P6 Data Sources** enables you to access the following information, based on your permissions:
 - **Data source:** Captured from P6 Summary Sheets, for use in Cost Sheets or Cost Sheets Templates.
Examples of P6 Data Sources: Current Schedule Summary, Original Baseline Summary, Sanctioned Baseline Summary
 - **Dataset for the attribute "Type" for P6 Summary Sheets**

Note

Unifier allows a maximum of 12 P6 Data Sources to be integrated, with "Current Schedule" as one of the 12 P6 Data Sources must be named.

Configuration Package Management

You can manage the configuration package creation and import through the **Configuration Package Management** grouping node in the left Navigator. The grouping node contains the following functional nodes:

- **Component Lists:** Displays a list of all components in a configuration package.
- **Add-on Component Lists:** Displays a list of add-on components and enables you to create an add-on component list for use with a configuration package that can be imported in to a different development environment.

Note

The **Add-on Component Lists** functional node, when included with the **Component Lists** functional node, is only available in the development servers.

The **Add-on Component Lists** functional node is available for the users who have "Enable" permission for the **Configuration Package Management** grouping node.

The **Add-on Component Lists** and the **Add-on Configuration Packages** (below) follow the same naming convention as regular Component Lists and Configuration Packages, for package names. Similar to the component lists, the add-on component lists can be saved with or without performing error check.

- **Configuration Packages:** Displays a list of component packages and enables you to create and import newly created or existing component packages.

- **Add-on Configuration Packages:** Lists all the added configuration packages existing in the Development environment and is available for the users who have "Enable" permission for the Configuration Package Management grouping node.

For more information, see Configuration Package Management.

System Information

The **System Information** grouping node contains the following functional nodes:

- **Auto Creation Audit Log:** Use this node to view the auto creation events across the company.
- **Autopublish Log:** Use this node to view the status—successful or failed—of all auto-publish events.
- **Background Jobs:** Use this node to view the status of tasks that are running or waiting to run. This includes items such as running reports and refreshing cash flows at specific intervals.
- **Background Jobs History:** Use this node to view the status of tasks that have run previously.
- **Background Jobs Statistics:** Use this node to access a visual representation of the data regarding background jobs. This node lets you identify the jobs that might be experiencing issues during execution.
- **BP Visualizer:** Use this node to view a list of BPs deployed in your environment and detailed information about each one.
- **Cash Flow Jobs:** Use this node to view a list of all active cash flow jobs. If you have the Modify permission, you can disable scheduled jobs or auto-snapshots for cash flow curves across all projects.
- **Design References:** Use this node to view a list of BPs deployed in your environment and the various references between the components used in the design of each BP.
- **Design Reports:** Use this node to view a list of BPs deployed in your environment and view, print, or export details about the components used in the design of each BP.
- **Design Usage:** Use this node to view a list of BPs deployed in your environment and identify where they are used.
- **Event Audit Log:** This node tracks all action events across the company that are initiated by a click. All hyperlink clicks are tracked from all users, regardless of their roles.
- **File Scan History:** Use this node to view a chronology of the list of files scanned associated with each project. It includes the Project Number, Project Name, File Name, No. of Scans, Status, Last Scanned Date, File Uploaded By, File Upload Date, and a link to the Audit Log.
- **OIC Integration Log:** Use this node to view a list of every Oracle Integration event. The list includes the **Initiated** date and time, **Origin** (project number), **Origin Name** (project name), **Source** (a Business Process, Master Rate Sheet, or an Activity Sheet), **Source Reference**, **Source Number**, **Integration**, **Step Name**, **Action**, and so on.
- **RAP Audit Log:** This node tracks all Reverse Auto-Population (RAP) processes and lists read-only diagnostic information that includes the trigger, source, and destination names; status; and how long execution took. Events are grouped by Trigger Name; however, you can sort the list using any of the columns. Audit records are retained for one month or until the table reaches 50 thousand entries. To view additional information, select the applicable record to display a **Details** tab in the right pane.

- **REST Service Audit Log:** This node tracks all REST Service Requests, including all web service calls. To view additional information, such as response times and performance, from the toolbar, select **Trend Analysis**.
- **System Reports:** Use this node to run any of a set of predefined reports and output the information to different formats.

Templates

The **Templates** grouping node contains the following functional nodes:

- **Shells:** Lets you create and maintain templates of the following shell types. Shell templates are used to create new or update existing shells.
 - **Buildings**
 - **Linear Assets**
 - **Projects**
- **Commitment Summaries:** Displays a list of summaries for all the *Commit Cost* Business Processes.
- **Configurable Modules:** The Configurable Modules consists of the following sub-nodes:
 - **FCA Manager:** The Facility Condition Assessment (FCA) manager is a Project/Shell level **Code-based** type manager with the following components:
 - * **Detail Form**
 - * **Picker**
 - * **Generic Cost Manager**
 - * **Material Inventory Manager**
 - * **Parts Manager**
- **Cost Sheets:** Lets you create and manage Cost Templates that can help you track and manage cost in projects/shells, and across the company.
- **Folder Structures:** Lets you create and manage templates for the folder and subfolder structure used in a shell document manager.
- **Funding:** The Funding node consists of the following functional nodes:
 - **Funding Sheets:** Lets you create and manage one template for a company funding sheet and multiple templates for project/shell funding sheets.
 - **Commitment Funding Sheets**
 - **Region/District**
 - **Site/Campus**
- **General Spends SOV:** Lets you define the required columns and formulas that are used to validate summary commitments.
- **Reports:** Lets you create and manage user-defined reports (UDRs) that can be added to a shell or shell template.
- **Rules:** Lets you create and manage the requirements that are used to validate the steps taken for business process records.

Company Workspace

The **Company Workspace** node contains the following functional nodes:

- **Business Process Setup:** Lets you configure how a business process deployed at the Company level will function.
- **Business Process Updates:** Lets you update Preventive Maintenance (PM) Books for PM functionality at the Company level.
- **Planning Manager:** Provides sponsoring companies the ability to create, organize, manage, and update all company or project/shell planning initiatives from conception to completion.
- **Resource Manager:** (Deprecated starting with version 23.10.) Lets you create and manage personnel resources and assign roles to each resource.
 - **Roles**
 - **Resources**
- **Rules:** Lets you create and manage rules that govern transactions on the Company level cost sheet.
- **Auto-update Status Setup:** Lets you configure automatic updates of project statuses for active projects.

Company Sponsored Shells

The **Company Sponsored Shells** node lets you configure and manage multiple aspects, such as access, user administration, and rules, of the various types of shells, such as **Buildings**, **Projects**, **Site/Campus**, and so on.

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Shell Landing Page (Admin)

After you create a shell, it is available for use.

To access your shell landing page:

1. Select the shell tab to open it.
2. Switch to **Admin** mode.
3. In the left Navigator, select your shell name on top.

The top section of the landing page contains the Shell Dashboard.

By default, the shell dashboard contains the following blocks:

- **Tasks**
- **Notifications**
- **Mail**
- **Image**
- **Details**
- **Links**

By default, the following two tabs are displayed.

- **Summary**
- **Workspaces**

You can change the layout of the tabs in My Dashboard.

Example

Block Length: 2 units

Block Height: 2 units

The following explains the various informational blocks in the Summary tab:

- **Tasks**
This block lists the total number of tasks belonging to the shell. In **User** mode, when you select Tasks, you go directly to the Task log.
- **Notifications**
This block lists the total number of notifications belonging to the shell. In **User** mode, when you select Notifications, you go directly to the Notifications log.
- **Mail**
This block lists the total number of e-mails belonging to the shell. In **User** mode, when you select Mail, you go directly to the Inbox log.

 Note

Accessing the Tasks, Notifications, and Inbox logs by selecting their respective tabs is not supported in **Admin** mode.

- **Image**
This block displays an image, if available; otherwise, the block will be blank.
- **Details**
This block is displayed with either custom fields or default fields based on the configuration of the details block that is designed in uDesigner, shell manager. In the latest version, the shell home landing page displays the custom fields; otherwise, the shell home landing page only displays the default fields.

You can edit the details block by selecting **My Dashboard**, selecting **Edit Dashboard**, and selecting **Edit**  in the block. This capability applies to block information, or to the fields that must be displayed in the block.
- **Links**
If links have been added to the shell details, those links are displayed in this block.

Important Information

The **Tasks**, **Notification**, and **Mail** are grouped together in a standard block called "Items Requiring your Attention" that can be added or removed. Individual tiles cannot be added or removed.

You can add this block by selecting Add Block , selecting Standard, and selecting Data Type as "Items Requiring Your Attention." When you save the Standard Block, the block will be added automatically to the dashboard.

The following explains the various informational blocks in the **Workspaces** tab:

The **Workspaces** tab is only available when geo-code server details are configured in Unifier.

- If there is no geo-location present in the sub-shells, Unifier displays a map without location markers.
- If there is a geo-location present in the sub-shells, Unifier displays a map with location markers.

When you hover over the location markers on the map, you can see the details for the location marker based on available information.

When you right-click the location marker, you can open the shell (for that location) in a new tab.

The left pane of the workspaces tab displays a log of all sub-shells that have been created under the currently selected shell. You can access sub-shell dashboards by selecting the *gear menu*  and selecting **Open**. If you would like to navigate backwards to parent shells, you can use the breadcrumb links listed above the **Workspaces** tab.

The user-created dashboards support all the existing functionalities, except the sub-shell log.

You can show or hide this tab in the **Edit Dashboard** window.

You cannot delete the Workspaces tab in any Dashboard.

My Dashboard () enables you to:

- Access additional dashboards for the shell, if available.

- **Edit Dashboard**
To open the editing mode of the current dashboard.
- **Details**
To view the shell details, as overlay. The details include Shell Name, Shell Number, and the following tabs:
 - General
 - Currency
 - Options
 - Images
 - Links
 - Calendar
 - Custom Print Template
 - Gateway Integration: Displays projects set up with Gateway as the default integration engine.
 - Integration: Displays projects set up with Oracle Integration as the default integration engine.
- **Print**
To print the information on this page.
- **Audit Log**
To open the Audit Log as an overlay.

The **Workspaces** tab Sub-shell log has the following toolbar options:

- **View**
For example, Buildings, Land, Projects, Regions.
- **Group By**
Select, Hierarchy.
- **Actions**
 - **Get Activity Sheet Data**
All Shells
Selected Shells
Filtered Shells
History
 - **Send Activity Sheet Data**
All Shells
Selected Shells
Filtered Shells
History
- **Search**
- **Find on page**
- **Expand All Groups**

The columns displayed in the sub-shell log listed on the **Workspaces** tab are dynamically generated based on the fields defined in the **Shell Manager Standard Log** for the selected shell type in uDesigner with the exception that the first column always displays the **Shell**

Name. To prevent redundancy, if a **Shell Name** field is also configured in the **Standard Log**, it is excluded from the dynamic column set because it is presented as the first column by default.

- Name
- Shell Number
- Shell Name
- Description
- Status
- Administrator
- Location
- User-Defined Text

The right pane displays the map that shows the regions.

Project Landing Page (Admin)

To access your project landing page (Admin):

1. Select your project tab to open it.
2. Switch to **Admin** mode.
3. In the left Navigator, at the very top, select your project name.

The project landing page has the following elements:

- Left Navigator contains the following nodes (modules):
 - Project name
 - Member Companies
 - Access Control
 - User Administration
 - Setup
 - Rules
- Right pane, which contains:
 - On the top:
 - * Tab name: Company Workspace
 - * Menu options (File, Edit, View, and Help)
 - * Toolbar options (New, Open, and Find)
 - Below the top, on the left, project general information:
 - * Project name
 - * Description
 - * Number
 - * Address
 - * City
 - * State
 - * Country
 - * Phone
 - * Fax
 - * Email Address
 - Below the top, on the right:
 - * Progress
 - * Links

Self-Service Portal

The Self-Service Portal enables users to sign in and work with specifically-enabled business processes. For example, Oracle Primavera customers use Unifier for corrective work order management. These work requests are usually generated from project participants who do not use Unifier. These participants can use the Self-Service Portal, which allows request submittals through a web-based tool. Users can use the Self-Service Portal to submit requests, to view the status of these requests, and to collaborate on submitted requests.

In uDesigner, you can enable certain business processes to be accessed through the Self-Service Portal. The business processes that you can enable to be accessed through the Self-Service Portal must have the following characteristics:

- Simple
- Company level
- Non-workflow
- Multi-record

The actions users can take through the Self-Service Portal are:

- Create a business process
- Modify a business process
- Add or remove business process attachments
- Add General Comments to a business process

Before you begin, design the Landing Page in terms of the text and graphics that you want it to contain. Then:

Step 1: Set Landing Page permission.

Step 2: Configure and activate the Landing Page.

Step 3: Specify users that receive portal-specific notifications. For more information, see [Setting Up Non-Workflow Business Processes](#).

Setting Up a Self-Service Portal Landing Page

Note

You must have Configure permission to be able to configure a Portal Landing page.

To set Landing Page permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **configuration**, expand **All**, and then select **Landing Page**.

4. Set the permission as needed: **Configure**: Administrators can configure Self-Service Portal Landing Pages.

Configuring and Activating a Portal Landing page

If you have the Configure permission for the Self-Service Portal Landing Page, you can use an HTML editor to set up a Landing Page. After you configure and activate the Portal Landing Page, users signing in to the Self-Service Portal will see this landing page. You can configure one Landing Page and activate this page for use.

Note

If the Landing Page is not configured, the user who signs in to the Self-Service Portal will see the **Announcements** page.

To configure and activate a Portal Landing page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Landing Page**.
3. Select **New**.
4. Enter the **Setup Name** and an optional **Description** of the page.
The default initial status of the page is **Inactive**. You can change this status after you complete the page.
5. Select the **Layout** tab.
6. Use the **HTML** editor to add text and perform other editing functions.
7. Select **Insert Image**  to insert an image into your Landing Page. Browse for the image, and select **OK** and **Close** after the upload is complete.
8. Select **OK**.

To activate a Portal Landing page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Landing Page**.
3. Select the Landing Page in the log.
4. From the toolbar, select **Status**, and then select **Active**. You can inactivate the Landing Page by selecting **Status**, and then selecting **Inactive**. When a Landing Page is inactive, the user who signs in the Self-Service Portal sees the Unifier **Announcements** page. If no active Landing Page is set up, the portal user sees a default Landing Page.

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Dashboards

Similar to other software applications, the dashboard in Unifier is a user interface that provides a view of important performance indicators and data related to the shell, organization, or company.

The *shell* dashboard is a general view of a specific shell's data, and it is not specific to any one user view of data; therefore, the administrators can create multiple shell instance dashboards per shell.

Administrators can configure the dashboard from the **Dashboards** sub-node, under the **Setup** node:

1. Go to the applicable shell and switch to **Admin** mode
2. In the left Navigator, select **Setup**, and then select **Dashboards**.

The **Dashboards** log contains a list of existing dashboards, and the details are listed in the following columns:

- **Name**
- **Description**
- **Last Modified By**
- **Last Modified Date**

Use the *gear menu* () located next to each item on the log to conduct the following on each dashboard listed:

- **Open**
- **Copy**
- **Mark as Default (Unmark as Default)**
- **Delete**

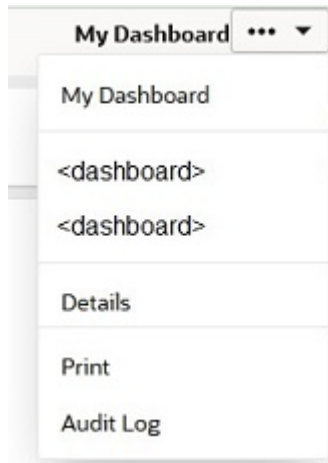
Depending on the setup, this option will change. If the **Mark as Default** option is available, the selected dashboard name will replace the label **My Dashboard** on the shell landing page. If the **Unmark as Default** option is available, the label **My Dashboard** will replace the selected dashboard name on the shell landing page.

The **Dashboards** log also lets an administrator:

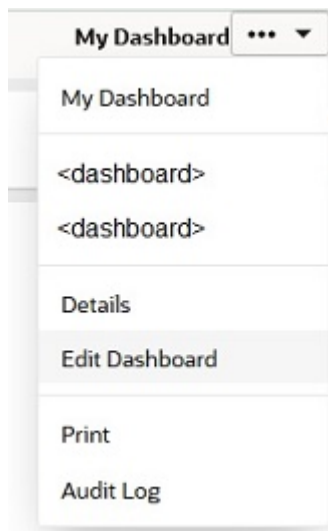
- Create, delete, or find dashboards by using the following toolbar options:
 - **Create**
 - **Delete**
 - **Find on Page**
- Change the dashboard properties and set permissions within the following tabs on the right pane:
 - **Properties tab**
 - * Change the dashboard name (**Name**)

- * Provide a description for the dashboard (**Description**)
- **Permissions** tab
 - * Displays the **Selected Users/Groups**
 - * Enables you to **Add User**
 - * Enables you to **Delete User**

If a user has the **View** permission, the user can only view an existing dashboard by going to the shell, switching to **User** mode, selecting **Home** in the left Navigator, selecting the **My Dashboard** submenu, and selecting the <dashboard>, as shown below.



If a user has the **Edit** permission, the user can edit an existing dashboard by going to the shell, switching to **User** mode, selecting **Home** in the left Navigator, selecting the **My Dashboard** submenu, and selecting **Edit Dashboard**, as shown below.



A user who creates a shell can create a dashboard for that shell.

Updating Company Information

If you have the applicable permissions, you can update some fields on the **Company Information** page.

To access the page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select your company name, which accesses the **Company Information** page.

Updating the Company Photo

To add or replace a company photo:

- On the **Company Information** page, select **Upload Company Photo**, and select the applicable file.

To remove a company photo:

- On the **Company Information** page, select **Remove Photo**, and select **Remove** when the confirmation message appears.

Updating the About Section

To update information in the **About** section:

1. On the **Company Information** page, to the right of **About**, select **Edit** .
2. Update any of the following fields:
 - **Name:** Enter a company name, up to 64 characters. It can include alphanumeric characters, spaces, and punctuation.
 - **Short Name:** Enter a short name, up to 60 characters. The Short Name is a unique, abbreviated form of your company name that is used throughout the system in place of the company name.
 - **Contact:** (Optional) Select a user from the User Picker list. The list is generated from the list of active users in the **Users** log (**Company Users** in **User Administration**).
 - **DUNS:** (Optional) Enter the nine-digit Data Universal Numbering System (DUNS) number assigned to your company by Dunn & Bradstreet.
 - **Home URL:** (Optional) Enter the main Uniform Resource Locator (URL) for your company. The system validates the specified URL based on the Uniform Resource Identifier (URI) provided by the Site Administrator and on URL standards. For more information, see the **URL Guidelines** table below.
 - **Help URL:** (Optional) Enter an additional URL to point to internal documentation regarding company policies or practices, an intranet site, or other internal information

that you choose. The system validates the specified URL based on the URI provided by the Site Administrator. For more information, see the **URL Guidelines** table below. In addition to displaying the link on the **Company Information** page, it also adds a **Company Help** option to the **Help**  menu. The **Company Help** option is only available if a valid URL is provided.

- **Description:** (Optional) Enter information that describes your company, such as its line of business.

3. To save your changes, select **Update**.

URL Guidelines

Protocol	Length	Characters
Must use an approved protocol, followed by ://, and then followed by a host name or domain name. The domain name must include at least one dot and a valid top-level domain such as .com, .net, .org.	4000 characters or fewer	Valid characters include alphanumeric characters and special characters such as -, _, ., ~, /, ?, :, @, &, =, +, \$, #.

Updating the Addresses Section

At a minimum, you must enter one, which functions as the default company address. The default address is used to generate an online company location map. You can add up to six additional company addresses.

To update information in the **Addresses** section:

1. On the **Company Information** page, choose one of the following:
 - To update an existing address, select **Edit** .
 - To add an additional address, select **+ Add**.
2. Complete the applicable fields.
 - **Address type:** Select from the list.
 - **Attention:** (Optional) Select from the list. The list contains active users from the owner company and is sorted alphabetically by first name.
 - **Country:** Select from the list.
 - **Address line 1:** Enter the address.
 - **Address line 2:** (Optional) Enter additional address information.
 - **City:** Enter the name of the city.
 - **State:** Enter the name of the state or region.
 - **Zip:** Enter the ZIP Code or postal code for your location.
 - **Phone:** (Optional) Enter a phone number.
 - **Fax:** (Optional) Enter a fax number.
3. Choose one of the following:
 - To save changes to an existing address, select **Update**.
 - To save changes for an additional address, select **Add**.

Updating Company Settings

If you have the applicable permissions, you can update some fields on the **General**, **Security**, **IP Allowlist**, **Password Policy**, **Support**, **AI**, and **Lobby** tabs within the **Company Settings** page.

To access the page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Settings**.

Updating Company Settings on the General Tab

To complete the **General** tab:

1. On the **Company Settings** page, select the **General** tab, and then select **Edit**.
2. In the **Environment** section, use the **Name** field to specify a name for the environment, which makes it easier to differentiate between Test, Development, and Production Environments.
You can enter an alphanumeric name that is up to 30 characters in length. You can use underscores (_) and hyphens (-).

Note

- The label does not need to be unique across multiple test environments.
- Changes are not reflected until you sign out and sign in again.
- All changes are reflected in the Event Audit Log.

3. In the **Shells** section, select the display element, **Name** or **Number**.
By default, **Name** is selected. Based on the setting in this field, the labels change in the following areas:
 - Top navigation tabs
 - Breadcrumbs
 - The first (top) left menu node (Home node) for the project/shell
 - Bookmarks: Add new bookmark (editable label of bookmark)

If you select Name to display the shell name, the default string appears as "{Shell Name} - {Location}" when adding a new bookmark.

If you select Number to display the shell number, the default string appears as "{Shell Number} - {Location}" when adding a new bookmark.

The tooltips are displayed as: {Shell Number} - {Shell Name}

4. In the **Dashboard** section, select or clear **Hide tabs in Company Dashboard**.

By default, this option is *deselected*, which means all users are able to view and modify the **Summary** tab of the project/shell dashboards, and the **Edit Dashboard** option is enabled.

If you select it:

- No tabs are displayed on the company dashboard and only the **Company Workspace** information is displayed.
 - The **Summary** tab and other tabs created are hidden and only the **General** tab is visible. There will be no **General** tab heading, because there is only one tab on the dashboard. Users only see the **General** tab along with the logged in user's information.
 - The **Edit Dashboard** option is hidden.
5. In the **Microsoft 365** section, select **Enable Integration** if you want users to view and update Microsoft Office documents in the Document Manager and business processes (BPs) using Microsoft 365 (Office for the web).
Users can view and modify:
 - Excel (XLSX) files
 - PowerPoint (PPTX) files
 - Word (DOCX) files
 Users can only view Comma Separated Values (CSV) files.
 6. In the **Bid Management** section, enter the account name of the user who will be managing the bids that your company receives.
This is the account that will contain the bidder's preferences you specify when you create the bid management account. For more information, see the *Unifier Modules Administration Guide*.
 7. In the **User-defined Reports** section, **Maximum Record Limit** field, use the list to set the maximum number of records to be retrieved for the company.
By default, the maximum number is set to 1 million.
 8. In the **Emails** section, **Maximum Attachment Size (in MB)** field, specify the maximum file size for each of outgoing email.
For more information, see [Outgoing E-mails \(More Information\)](#).
 9. In the **Sheets** section, complete the applicable fields.
 - **Activity Sheets:** Enter a link to a source application, P6 or Oracle Primavera Cloud, in the applicable field. By default, the URL fields are empty. If a URL is not provided, the system does not display a link in a project activity sheet.
 - **P6 URL:** https://site_url/p6/...
 - **Primavera Cloud URL:** https://site_url/web/...
 - **Cost Sheets:** If you want restricted groups or individual users to be able to view or edit a cost sheet column, select **Override column restrictions**. By default, this option is deselected.
 10. To save your changes, select **Save**.

Outgoing E-mails (More Information)

If the size of an e-mail exceeds the limit as defined in the **Maximum File Size Limit (in MB)** field, the system removes attachments and appends a message to the email, informing the recipient that the email attachments have been deleted and that the recipient should sign in to the system to view the email.

Updating Company Settings on the Security Tab

To complete the **Security** tab:

1. On the **Company Settings** page, select the **Security** tab, and then select **Edit**.
2. In the **Files** section, complete the applicable fields.
 - **Maximum File Size Limit (in MB):** Enter a size limit number greater than 0 bytes. The default is 100 megabytes (MB).
 - **File Type Restrictions:** Select either **Allow** or **Block**, and then use the **File Extensions** field to specify the types of files that a user can or cannot upload to the system. Enter the file extensions separated with commas.
 - **Skip alert while viewing or downloading files awaiting virus scan:** If you do not want to display a **Confirmation** message to a user who tries to access or download a file that has not yet been scanned, select this option.

Note

This option is only visible if you are using an Oracle Cloud-based Unifier deployment.

3. In the **Hyperlinks** section, **Allowed URIs** field, specify custom Uniform Resource Identifiers (URIs) that can be used by your company.
Valid URIs must start with a letter, but can contain numbers and certain symbols, including: +, -, and .

Note

When a company chooses to allow additional URIs, such as FTP, the system will relax the current validations that are in place for URL standards. However, validations will still be applicable to HTTP and HTTPS URIs, and all other standard requirements, such as the use of double forward slashes (//) are enforced. This might affect records created using auto-create and import functionality.

4. In the **User Profile** section, complete the applicable fields.
 - **Hide personal information on user profiles:** To hide the basic information associated with user profile fields, select this option.
 - **On mobile app, allow saving user profiles:** To display a user's information and let Company or Partner Users store the user's profile on Unifier Mobile for offline use, select either or both of the following options:
 - **For company users**
 - **For partner users**
5. In the **Proxy Login** section, select **Allow partner users to grant proxy login to owner company users**, if applicable.
6. To save your changes, select **Save**.

Updating Company Settings on the IP Allowlist Tab

To complete the **IP Allowlist** tab:

1. On the **Company Settings** page, select the **IP Allowlist** tab, and then select **Edit**.
2. In the **IP Allowlist** section, select **Allow API access only from below IP addresses** if you want to control the IP addresses from which Representational State Transfer (REST) web service calls are allowed.
Enter IP addresses to allow in the IPv4 and IPv6 fields by using comma (,) or semicolon (;) separators.

You can enter IP addresses in CIDR notation to allow IPs in a particular range. The maximum number of characters allowed for the IPv4 and IPv6 fields is 1000, and duplicate IP addresses will be removed. This Allow IP list filtering can be bypassed if an `EXTERNAL_REQUEST` header parameter is set to false or not provided in the request.
3. To save your changes, select **Save**.

Updating Company Settings on the Password Policy Tab (On-Premises or Self-Hosted Deployment)

If you are using an on-premises or self-hosted deployment, your Owner Company (also referred to as Sponsor Company) Administrators can specify password security policies. By default, the minimum password requirement is set at one character, meaning that the user is required to create a password with a minimum of one character. If a value is not entered in a field, the option is ignored. These settings only apply to Owner Company users. These settings do not apply to Partner Company users. For the Partner Company users, the default settings apply.

Note

If you are using a cloud deployment, this tab is hidden because password policies are managed through Identity Cloud Service (IDCS). For more information, refer to the *Oracle Primavera Administration Identity Management Administration Guide*.

To manage user password criteria on the **Password Policy** tab:

1. On the **Company Settings** page, select the **Password Policy** tab, and then select **Edit**.
2. In the **Password Complexity** section, enter values in the applicable fields.
A value of 0 indicates that a restriction does not apply.

For the **Minimum Special Character** field, valid special characters include: [{ ~ ! @ # \$ % ^ & * () - _ = + ; : ' " , < . > / ? }]
3. In the **Password Rules** section, select the applicable options.
For the **Password recovery secret questions setup required** option, users are prompted to set up security questions for password reset upon first login. Existing users are prompted to set up security questions upon the next login.

Note

This option is available for Owner, Partner, and Hosting companies. When selected, it requires users to set up the password recovery secret questions. This is applicable to all users in the respective companies including Company Administrators and Site Administrator.

4. To save your changes, select **Save**.

Updating Company Settings on the Support Tab

In the **Support** tab, you can provide your users with the email address or phone number of your internal support staff. This information is displayed in error messages users might encounter if their accounts become locked, on the **Contact** tab of the **Support** window, and at the bottom of email notifications. The information included for email notification can contain a hyperlink to your local support. For information about translating **Email Notifications**, see [Internationalization \(Email Notifications\)](#).

In addition, if your company is part of the eLearning suite of interactive tutorials, you can provide access information to your users in this tab. You can also use this space for any location (such as an internal website) where you have provided Unifier training materials.

To complete the **Support** tab:

1. On the **Company Settings** page, select the **Support** tab, and then select **Edit**.
2. In the **Support Contact** section, complete the following fields:
 - **Email:** Enter an email address for company internal support.
 - **Phone:** Enter a phone number for company internal support.
 - **Instructions:** Enter additional information on how to use the support information.
 - **Email Notifications:** Enter additional information that should appear at the bottom of email notifications. This field supports simple html formatting and can include a hyperlink.
Example:

```
<p>For YourCompany support, contact <a  
href="mailto:support@yourcompany.com">support@yourcompany.com</a> or  
1-800-555-1212.</p>
```


which will display in the bottom of record email notifications as:

For YourCompany support, contact support@yourcompany or 1-800-555-1212.
3. In the **eLearning Access** section, complete the following fields:
 - **URL:** Enter the URL for eLearning access. Oracle recommends that you include the entire address.
 - **Label:** Enter that label that is used for the preceding URL. The label can display the actual URL, or you can a different label. This label appears as a hyperlink to users.
 - **Contact email:** Enter an email address that you want users to use if they need to contact someone. Enter a valid email format, for example, elearn@yourcompany.com.
 - **Instructions:** Enter instructions or other information such as a contact phone number. This field does not support html formatting.

4. In the **Oracle Guided Learning** section, complete the following fields to use the OGL feature:
 - a. Select **Enable**.
 - b. In the **App ID** field, enter the App ID of your custom help application if you have a subscription and want to display your customized help content. Otherwise, specify a blank App ID to invoke the default online help.
[Video](#)
5. To save your changes, select **Save**.
Corresponding Audit log entries are created to track changes made to the above settings.

Updating Company Settings on the AI Tab (Cloud Only)

To complete the **AI** tab:

1. On the **Company Settings** page, select the **AI** tab, and then select **Edit**.
2. To enable summarization for business processes (BPs), select **Enable for Company Users only** or **Enable for all users (Company and Partner)** in the **Records Summarization** section.
3. To enable insight into workflow BPs and the steps that they go through, select **Enable** in the **Task Assist and Progress Guide** section.
4. To enable chart recommendations for Visualizations, select **Enable** in the **Content Recommendations** section.
5. To save your changes, select **Update**.

Note

Summaries created by **Records Summarization** and **Task Assist and Progress Guide** are prepared by generative AI. Carefully review and verify these against trusted sources, as it may include out-of-date, inaccurate, or incomplete information.

Additional Information About Task Assist and Progress Guide (Cloud Only)

If you enabled the **Task Assist and Progress Guide** AI-based feature, the system automatically activates and structures an AI panel for workflow BPs. The AI panel adds **Task Assist** and **Progress Guide** tabs to individual workflow BP records and tasks. Your users can use these tabs to answer questions such as:

- What is the topic of this workflow?
- What is the status of the workflow. That is, how many of the steps have been completed, and who was involved?
- Are there related issues that have arisen? For example, are there comments that have identified issues?
- How long has the workflow been in process?

Summaries are retained for 30 calendar days. Although summaries are hidden at a certain point, they are retained in a system database to ensure that Oracle can provide required support should the need arise.

When you enable access to **Task Assist and Progress Guide**, it is provided globally, throughout the system. You do not have to update specific permissions for individual users. However, the permissions assigned to specific users and workflow BPs determine what information is displayed to each user when the AI options are accessed. It also determines what information is actionable and what is designated read-only. For **Task Assist**, the user must have access to both the Audit Log and workflow progress. For **Progress Guide**, the user must have access to the Audit Log. For more information, see the .

Details About Task Assist

Task Assist provides a different summary based on where the user is in the progress of the workflow BP. For example, the first time an assignee accesses **Task Assist**, it uses the Create step to generate a summary and describe what the user should do next. As the BP moves through the workflow, **Task Assist** generates a new summary based on the previous step. If the user is accessing a previously accessed step, **Task Assist** highlights what changed from the first time the user accessed it, such as new comments or attachments.

Summaries are retained for 30 calendar days. Access to the summary is hidden after the BP proceeds to the next step in the workflow. If the BP does not move to the next step for 30 days, the summary is deleted, and the user can generate a new one.

Details About Progress Guide

Progress Guide displays a summary of all steps in the workflow, whether it is in progress or is complete.

Summaries are retained for 30 calendar days. Any changes to a step in the workflow trigger deletion of the summary for that step. Summaries for previous steps are hidden after 30 days, no matter how long it takes to complete the BP workflow. If the workflow moves from a Complete status to In Progress, an Action Form initiates a change in the status, or the Audit Log notes more changes, the summary highlights the changes for the user who generated the summary.

Updating Company Settings on the Lobby Tab (MT Cloud Only)

In general, the **Lobby** tab lets you manage the list of users who can function as administrators for the Construction and Engineering Lobby. This allows linking of projects between Unifier and Oracle Primavera Cloud.

In particular, the **Lobby** tab lets you add company-sponsored users who can act as Organization Administrator (Lobby Administrator) in the Lobby.

Note

The Construction and Engineering Lobby receives the list of projects and administrators from the Development, Test, and Production environments.

To add or remove Lobby Administrators to or from your company:

1. On the **Company Settings** page, select the **Lobby** tab, and then select **Edit**.
2. Choose either of the following:
 - To add a user, select the user from the list, and select **Add**.
 - To remove a user, select  to the right of the applicable name.

3. To save your changes, select **Save**.

The Organization Administrator (Lobby Administrator) can perform the following functions in the Lobby:

- Access **Additional Directory** options in user settings.
- View the directory of all users in the Lobby.
- Link projects between different product applications, provided that the user (the Organization or Lobby Administrator) is in at least one product application. Lobby will provide a user interface component that enables the Organization Administrator to link two projects. This process will call the:
 - Project linking service that brings up the linking project dialog
 - Project launcher for viewing and launching linked projects

Example

If **User A** is sent as Lobby Administrator from Unifier, and **User A** is also in Primavera Cloud, **User A** can link the projects that **User A** has access to between the product applications.

On the **Lobby** tab:

- The system displays the full name of the Organization or Lobby Administrator (user). If a user's status changes to on-hold or inactive, the user remains visible on the **Lobby** tab. In such a case, the Organization or Lobby Administrator must remove the name from the **Lobby** tab manually.
- The **Add** option enables the Organization or Lobby Administrator see a list of all active Company (Company-Sponsored) users, by way of a user picker. You can select one or more active users to add them as the Lobby Administrators. Unifier sends the list of the active users to Lobby, so that they can act as Unifier Organization Administrators. When the first user of the organization logs in, Lobby gets a list of all other users from this tab and sets the proper values.
- The **Remove** option enables the Organization or Lobby Administrator to remove a user. A Company Administrator can also remove users.

In case of users or Lobby Administrators that do not exist, Lobby initiates a request to get the latest list of the users.

Unifier sends the latest list of the users to Lobby only when a user who is not included as the Organization or Lobby Administrator, or a new user, attempts to log into Lobby.

 Note

A user who has been removed from the **Lobby** tab can log into Lobby until the latest list of the users are retrieved from Unifier.

The Audit Log is updated with the users added or removed in the **Lobby** tab. The Audit Log is also updated when a user's status is changed from active to inactive, or from inactive to active.

If a Unifier user who happens to be an Organization Administrator logs into Lobby, the system adds an additional column (**Admin**) to the Lobby, in the **Organization Directory** page. For each organization row that is displayed, the system displays an icon to designate that the logged in user has this role assigned in Lobby. That is to state: For each user who has the Organization Administrator flag set as true in the Lobby, the system displays an icon.

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User Administration

This section covers adding and managing related permission settings and related access control for:

- **Company Users** (Sponsor Company and Partner Company users)
- **Partner Users** (Partner users)
- **Groups** (user groups)
- **Task Reassignment** (access control)
- **Integration Users**

Owner Company or Sponsor Company

The Owner Company or Sponsor Company is the entity that engages in business and has the complete control (or ownership) of Unifier with all its rights and privileges.

Partner Company or Member Company

The Partner Company or Member Company includes consultants, contractors, and vendors that have been invited to participate in a project by the Owner Company/Sponsor Company. The system lets you add a Partner Company/Member Company to enable project users to collaborate on (and coordinate) the execution of a project.

Note

A **Member Company** is a **Partner Company**. When a **Partner Company** is added to a shell, the **Partner Company** becomes a **Member Company**. That is to state: When a **Partner Company** participates in a shell, the **Partner Company** becomes a **Member Company** in that shell, and the **Partner Company** users that are added to the shell become the **Member Company** users.

To access the **User Administration** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**.

The following explains each sub-node in detail.

Generally, the values of the user attributes are specified under the **General** tab of the members in **Company Users** or **Partner Users**:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **User Administration**, and then select **Company Users** or **Partner Users** to open the log.
3. Select a member from the log, and select **Open**. The **Edit User** window for the user that you selected opens, and the **General** tab is displayed by default showing the values of the user attributes.

The same values of the user attributes that are specified under the **General** tab of the members in **Company Users** or **Partner Users** are also displayed (read-only) in the shells, within the **Users** or **Groups** sub-nodes:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Users** or **Groups** to open the log.
3. Select a member from the log, and select **Open**. The **Edit Projects User** window for the user that you selected opens, and the **General** tab is displayed (read-only) by default showing the values of the user attributes.

 Note

You can only edit the user attribute fields that are relevant to each shell.

Within a shell, on the **General** tab (of the members in **Users** or **Groups**) you can select the **Copy Attributes from Company Workspace** option to fetch all the company-level user attribute values from the company (**Company Workspace** tab) and populate the user attributes values the **General** tab.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users** or **Partner Users** to open the log.
3. Select a member from the log, and select **Open**.
4. In the **Edit User** window for the user that you selected (**General** tab) enter the user attributes.
5. Select **Apply** to save your changes, and then select **OK** to close the window.
6. Go to the shell tab, and switch to **Admin** mode.
7. In the left Navigator, select **User Administration**, and then select **Users** or **Groups** to open the log.
8. Select the member from the log, and select **Open**.
9. In the **Edit User** window for the user that you selected (**General** tab), select **Copy Attributes from Company Workspace**.
10. Follow the prompts so that the system can fetch all the company-level user attribute values from the company (**Company Workspace** tab) and populate the user attributes values the **General** tab.

 Note

If a user attribute value changes at the company level, the system will not update the corresponding value at the shell level.

When finished, select **Apply** to save your changes, and then select **OK** to close the window.
Select **Cancel** to discard your changes and close the window.

Assigning Application Access (Cloud Only)

To assign application access to *Unifier*:

1. Log in to Primavera Administration and do the following:
 - a. Add a user.
 - b. Assign application access for that user to **Primavera Unifier Production**.

Note

For details on using Primavera Administration, see the *Primavera Administration Identity Management Guide*.

2. Log in to Unifier as a company administrator.
3. Assign the users permissions that are specific to module access, functions, and tasks that they will use.
4. Repeat these steps for each user account that requires access to Unifier.

Editing User Permissions at Company, Shell, and Project Levels

The following user permission settings apply to *editing* user permissions at company level and project or shell level:

- When a user has the **Create** permission, all the fields on the **User Properties** window are editable. The **Apply** and **OK** options are displayed.
A user with **Create** permission at the company level will be able to create users and modify all the *properties* of the users, including the status and permissions.
- When a user has **Modify Status** permission only, the **Status** option is enabled. The **Apply** and **OK** options are displayed and enabled. All the other fields are not editable. A user who only has the **Modify Status** permission will be able to modify the *status* of users both from the **User Properties** window and the log.

Note

The ability to update the status from the log is not available at the shell, or project, level.

- When a user has the **Modify Properties** permission only, the **Status** option is not enabled (disabled). In this case, the user needs the **Modify Status** permission to be able to edit the Status field. The **Apply** and **OK** options are displayed and enabled. All the other fields are editable.
A user who has the **Modify Properties** permission without the **Modify Status** permission can modify the properties of the user. A user who has the **Modify Properties** permission without the **Modify Status** permission cannot modify the status of the users.

- When a user does *not* have the option to view the Audit Log because **Hide Audit Log** is *enabled*, it prevents the user from viewing the Audit Log for a project or shell, which ensures that the user is not aware of what changes are made to the shell, when they are made, and by whom.

You can grant specific permissions to the project or shell team members to allow them to conduct specific user administration setup tasks (such as maintenance tasks) according to the permissions that you have granted to them. You can set up these permissions in the Permission Settings for Users under the **User Administration** category in **Access Control (Admin mode)**.

The Permissions tab for the Users (under the User Administration) are:

- Add Users
- Modify Status
- Modify Permissions
- Modify Properties
- View

You can select any of the above permission options independently. When applicable, the second-level options will be selected automatically, when the first-level option is selected. This does not work in the opposite order. The same applies to the Users and Groups.

Example

If you select "Add Users" (a first-level option), the "View" (a second-level option) is selected automatically, but if you select "View" only, no other options are selected automatically.

Note

The company-level (company workspace) permissions are not affected.

While you are adding or modifying a user's permissions in a project or shell, the Permissions tab displays the user's permissions in read-only mode, if the user does not have the permission to modify permissions (Modify Permissions), despite having other permissions.

Importing the User Attributes Form

For company user administration, the system displays a default log, **General** tab (used when creating a user with the Company or Partner detail form), and User/Group picker, unless you design and import your own User Administration Attribute Form.

You can add additional data elements to the User Attributes form, configure Company User and Partner User logs, add additional attributes to the View User Profile form, and a User/Group picker. The additional data elements appear as user properties on the General tab for Company and Partner users, as well as on the user View Profile form. For example, the additional user properties can include a user's department and location, or other details.

For more information, see User Administration.

Note

The new attribute will be available only for **Company Users** log and **Partner Users** log and will not be available as part of custom attributes in other module designs.

All designs, including User Attributes forms, are designed in uDesigner and deployed to Unifier. For more information, see Importing Configuration Packages.

Adding and Managing Company Users

Company Administrators can add new users to the sponsor company. Each new user creates a new user record. These are known as *company users*. You can enter company users manually one at a time, or you can import multiple user records into the system from a CSV file.

Note

For information about the columns, such as time zone, user type, and language, see the .

To ensure compliance with company standards and to restrict access, Oracle recommends that the responsibility for user administration (at the company level) be delegated to one person or a small group of people.

To access the Users log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**. The Users log lists the users defined for your organization.
3. To open an existing record, select a user in the list, and select **Open**.

Note

If a **User Attributes** form has been imported, the columns that appear in the Users log can vary. If designed in uDesigner, the log can include navigation in the left pane. This navigation lets you filter the display of listed users listed. If you decide that you want a standard log to display, you can remove the navigation from the log in uDesigner. Also, the search criteria in the Find window and sort order can vary depending on what was added to the User log design in the **User Attributes** form.

User Type

The **User Type** column in the Users log identifies the type of user per following:

- **SYS User Type/Standard:** The SYS User Type/Standard User, which refers to both Company and Partner users, can have access to all modules, except Earned Value Management (EVM). If the Earned Value Management component is selected for a Standard User, the component will be available to the Standard User. The licensing purchased by your organization determines whether EVM is included.

Note

For information specific to the Earned Value Management module, see the .

- **SYS User Type/Portal:** The SYS User Type/Portal User can only have access to the self-service portal login.

The Users log contains multiple *menu* options that you can use to perform steps such as creating new users manually or through import or updating types. The *toolbar* options provide access to some of the same features as well as providing quick access to changing the Status of a user account.

The **Update User Type (To Portal and To Standard)** option, collectively, work as a bulk action on one or more selected user rows for updating the user type. For example, you can select one row, or multiple rows, select **Update User Type**, and change the user type to portal or standard.

If the user type attribute is not mentioned when creating the user, the user type for that user will be set to Standard by default.

The Attribute "Earned Value Management" displayed is unchecked by default. If the user selects this option, the user will be granted access to the Earned Value Management module. This checkbox will be disabled for Portal users. The licensing purchased by your organization determines whether this checkbox is visible.

Note

The checkbox for Earned Value Management users will be seen only when the Earned Value Management module is loaded.

In the **License Manager**, the Company user and Partner user are considered Standard users in terms of license count and combined count for License Terms and Current Usage. (For more information on using the License Manager, see [Working with the License Manager](#).) The **License Manager** page will generate and update a gauge chart for the following license types, which varies depending on the licensing purchased by your organization:

- Standard Users
- Portal Users
- Collaborator Users
- Earned Value Management Users

The counts for Portal users and Earned Value Management (EVM) users depend on:

- Whether a particular Company user is marked as a Portal user, and
- The Earned Value Management user in User Administration.

If there are more active users with accounts than the product is licensed for, the calculations in the **Active Named Users** fields might be higher in the **Current Usage** sections versus the **License Terms** sections. The excess or surplus (overage) is calculated in the same way as the Standard users.

The Site Administrator can edit the license terms and view the audit log for the users by selecting **Settings**. When editing the user count, the Site Administrator will have to enter a combined number for active named users. Depending on the licensing purchased by your

organization, the Site Administrator will also be able to edit the Portal users and EVM users count by using the General and Notifications tabs on the License Terms window.

The **User Type** column will be seen by default in the standard user data picker. For the custom user data picker, if the user has added the column, the user will be seen in **User Type** column.

In addition to the standard user (a user with access to all functionalities) and the portal user (a user with access to limited functionalities), the system supports the Collaborator User.

Note

- The Collaborator User is a Partner User. Any user can be declared as a Collaborator User, but a Collaborator User will have limited access to Unifier functionality. The Collaborator User status must be granted to external users such as vendors.
- A Collaborator User has access to the **Mailbox** node and its sub-nodes.
- If permission is granted, Collaborator users can view existing user-defined reports (UDRs) and custom reports, and they can create UDRs.

License terms for a company (customer) can only be changed by the **Site Administrator** (for the cloud customers this is the **Oracle Cloud Administrator**). As a result, to allow a **Company Administrator** to add a Collaborator User, the **Site Administrator** must first add licenses for the Collaborator User. For more information, see [Collaborator User](#).

Adding a Company User

This section describes how to manually add a new user record to your company. For information about importing multiple user records from a CSV file, see [Import company users \(add users or update users\)](#).

If you have created a **User Preference template** (in the **User Preference Templates** section of **Standards & Libraries**), the active template will automatically be used to generate the new user's user preferences. If there is no active template present, the system default settings will be used for the user preferences.

To add a company user:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. From the toolbar, select **New**, and then select **Manual**.
4. In the **Edit User** window, complete the fields of the **General** tab as discussed in the following table.
5. Select the **Security** tab.
You must also add a login user name before saving the record. See [Managing User Login Information \(Security Tab\)](#).

At this point, you can activate the user, save the record, or complete the rest of the tabs:

- **Groups:** You can add the user to existing groups. The default groups are Company Administrators, Project Administrators, Shell Administrators, and Support. The user automatically inherits group permissions. See [Manage a user's group membership \(Groups tab\)](#).

- **Permissions:** You can configure individual permission settings for the user in this tab. See [Editing User Permissions \(Permissions Tab\)](#). Alternatively, you can assign the user to a group (the user will automatically inherit group permissions), or assign permission through Access Control.
 - **Projects/Shells:** This tab lists the projects/shells to which the user has been added and is view-only. See [View User's Project and Shell Membership \(Project/Shell Tabs\)](#).
 - **Proxy:** You can add or view the user's proxy users in this tab. See [Designating a Proxy User \(Proxy Tab\)](#).
6. Select **Apply** to save changes, or **OK** to save and exit the window.

In this field:	Do this:
First Name, Last Name	Enter the first and last name of the user. These are required fields.
Title	Enter an optional company title for the user.
Email	Enter the user's email address, which will be used to send system notifications to the user, and will display in the user's contact information. This is a required field.
Work Phone	Enter the user's work telephone number.
Mobile Phone	Enter the user's mobile telephone number.
Home Phone	Enter the user's home telephone number.
Pager	Enter the user's page number.
Fax	Enter the user's fax number.
Address	To add a company address to the user profile (from Company Information), click Select .
Language	Select a language from the drop-down list.  Note The languages listed are the active languages selected in the Configuration - Internationalization log, by the administrator.
Time Zone	Choose the default time zone for the user. This can be changed in the User Preferences window.
Date Format	This setting controls the display of dates on reports, business process forms, and so on. This can be changed in the User Preferences window.
User Type	Select Standard or Portal . The Standard User has access to all modules, except Earned Value Management (EVM). The licensing purchased by your organization determines whether EVM is included. (If the Earned Value Management component is selected for a Standard User, the Earned Value Management is available to the Standard User.) The Portal User only has access to the self-service portal login.

In this field:	Do this:
Earned Value Management	This option is unchecked (cleared) by default. If you select this option, the user will be granted access to the Earned Value Management module. The licensing purchased by your organization determines whether EVM is included. This checkbox will be disabled for the Portal type of users.
Status	New users are Active by default. Status can be Active, Inactive or On-hold. Neither Inactive nor On-Hold users can sign in: • Active: User is listed in Project or Shell Directory, in User/Group Picker, User can sign in and participate in project/shell. • Inactive: User's name does not appear anywhere for selection on any project-or shell-related functions or User Picker. User cannot sign in but they can be given permissions and added to groups. • On-hold: User can be added to a project/shell and assigned as a participant in a business process workflow but cannot sign in. Normally used to pre-assign users to a new project/shell before activating it. Active and On Hold users will be counted against your user license terms; Inactive users will not.
Disable Mobile Access	This option is unchecked (cleared) by default. If you want to prevent the user from accessing the Unifier Mobile application, select this option.
Oracle Analytics Cloud Access	This option is unchecked (cleared) by default. If you want the user to have access to Oracle Analytics Cloud for report creation and management, select this option.

Collaborator User

The Company Administrator can:

- Create a user of the type "collaborator" only in the **Partner Users** functional node (go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **User Administration**, and then select **Partner Users**).
- Bulk update the user type to "Collaborator."
- Grant view-only permissions to existing user-defined reports (UDRs) and custom reports.
- Grant permission to create UDRs.

Note

All license constraints will be in place.

If you make a user a Contractor by assigning the Contractor User Type in Primavera Administration, the user consumes a Collaborator license in the system. Any other user classification (Employee, Intern, Temp, External, Service, Generic) consumes a Standard license.

Attention Unifier Cloud Administrator

When you are provisioning users in Primavera Administration:

1. While setting up users of Collaborator license type, you must select the user type as "Contractor" in Primavera Administration. The user type of "Contractor" is reserved for the "Collaborator" user type of Unifier. You must not use the user type "Contractor" for any other user type that may count towards Standard license.
2. If you want to create users with Standard license type, you can choose the user type to be any of the other values such as Generic, Intern, and so forth.

Impact on the Audit Log

Changes made to the Collaborator User license terms are captured in the **Audit Log** tab.

A Collaborator User license type can be manually added as a Partner User (through the User Administration node of the Company Workspace), imported through a CSV file, or added through REST API calls.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. In the **Partner Users** section of the log, select the company that you want to add the Collaborator User to.
4. From the toolbar, select **New**, and then select **Manual**.
5. In the **Edit User** window, **General** tab, enter the user information, select the **User Type** drop-down list, and select **Collaborator**.
6. To save your changes, select **OK**.

The **Update User Type** toolbar option lets you use the submenu option of **To Collaborator**. The same option is available in the **Edit** Menu.

The following table outlines the behavior of various options:

Selection	Update License Type	Usage
When one or more users are selected	Update to Standard	For all the selected users, the user type is updated to Standard.
When one or more users are selected	Update to Collaborator	For selected users, the user type if not Collaborator is changed to Collaborator.
When one or more Standard partner users are selected	Update to Portal	For the selected Standard Partner users, the user type is changed from Standard to Portal.
When one or more Standard partner users are selected	Update to Collaborator	For the selected Standard Partner users, the user type is changed from Standard to Collaborator.
When one or more Portal users are selected	Update to Portal	For selected users, the user type if not Portal is changed to Portal.
When a mix of Standard, Portal, and Collaborator users are selected	Update to Collaborator	For selected users, the type if not Collaborator is changed to the Collaborator.
When a mix of Standard and Portal users are selected	Update to Portal	For selected users, the type if not Portal is changed to Portal.

You can add a Collaborator User of the new license type in User Administration for Partner Users through CSV.

For the identity domain or Primavera Administration, to create a Collaborator User, a new attribute for the user type must be created, when creating a user.

Navigational nodes seen (**Home**):

- **Home**
- **Tasks**
- **E-Signatures**
- **Notifications**
- **Inbox**
- **Drafts**
- **Sent items**

 Note

The Master log is not displayed.

Navigational nodes seen (**Shell**):

- **Alerts**
- **Tasks**
- **E-Signatures**
- **Drafts**
- **Mailbox**
 - **Drafts**
 - **Inbox**
 - **Notifications**
 - **Sent Items**
 - **Deleted Items**
- **Information**
- **Document Manager**, with all the sub-nodes (based on logged-in user permissions).
- **Logs**, with all the business processes (that the logged-in user has navigational-level access to).
- **Reports** (based on permissions).
 - **User-Defined**
 - **Custom**

Because Project Mailbox is not available to the Collaborator User, the same option is also not available under "Linked Mail" of a BP. If there are any existing emails from the Project Mailbox in the linked mail of the particular BP, the emails would still be visible and accessible.

The Collaborator User will not have access to any non-BP type object in the left Navigator. If there are references on the BP forms, the Collaborator User will be able to access them. Also, any records that can be opened by way of a hyperlink in a non-BP type picker will be accessible to user.

Note

A user who does not have permissions for any shells can select any shell picker on the BP forms and add or reference a shell in a BP; the system does not restrict this based on the permissions. The same rule applies to a Collaborator User.

Here is a list of some of the pickers that are non-BP type:

- Space Manager
- Planning Items
- Code or Record Based Managers
- Shell Manager

A Collaborator User can have other Standard users who can act as proxies and can act as a proxy for other users. A Collaborator User can view this list in the **My Proxy** tab. All sub-options seen in the **Preferences** window are the same as other Standard users, including the Email Subscription options.

Note

The system does not prevent the Company Administrator from setting Collaborator user types as Proxy users; however, at runtime these types of users will not see the option to proxy on behalf of someone else.

The User Type "Collaborator User" is not available in the **Bulk Edit** log, and the license count is not checked when updates are made through bulk edit.

A Collaborator User has access to the following options in the top pane:

- **Announcements**
- **Bookmarks**
- **Help**
- **Recent Locations**
- **Key Locations**

Deleting a User

Company Administrators can delete an existing user from the shell template. This section describes how to manually delete a user from a shell.

Note

You can delete a user from a specific shell template but not from other shells that have been created using the template.

To delete an existing company user:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **User Administration**, and then select **Users**.
4. Select a user from the log.
5. Select **Delete**.
6. When the prompt appears that asks you to confirm deletion, select **Yes** to remove the membership from the shell template.

Importing Company Users (Adding Users or Updating Users)

If you have many users to add or update, you may want to import the records, so you do not have to manually open and update each user record. You can import multiple users with a CSV file by doing the following:

- Export a copy of the CSV file structure.
- Populate the CSV file with user information.
- Import the CSV file into the system.

To export a copy of the CSV file structure:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. From the **File** menu, select **Export**, and then select **Export Structure**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download it manually.

To export existing users for update:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. From the **File**, select **Export**, and then select **All**; or select users in the log and from the **File** menu, select **Export**, and then select **Selection**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download it manually.

To populate the CSV file with user information:

1. Open Microsoft Excel (or another program compatible with CSV format) and open the CSV file you just saved.
2. Enter or modify user information in the spreadsheet. The fields are discussed in the following table. Ensure that you review the notes after the table.
3. Save in CSV format.

In this column:	Do this:
First Name*	Enter user's first name.
Last Name*	Enter user's last name.
Title	Enter user's company title.
Email*	Enter user's email address.
Work Phone	Enter user's work phone number.

In this column:	Do this:
Mobile Phone	Enter user's cell phone number.
Home Phone	Enter user's home phone number.
Pager	Enter user's pager number.
Fax	Enter user's fax number.
Login Username*	Enter a unique username that the user will use to log in the system.
Password	Enter a password that will allow the user to log in for the first time. The user can change the password after signing in.
Time Zone*	Enter the code for the Time Zone (refer to the <i>Unifier Data Reference Guide</i> for the list of codes). This is a required field, even if you are entering a User Preferences Template Name (if the time zone specified in the template is different from this cell, the template selection will take precedence).
Date Format*	Enter the code for the Date Format (refer to the <i>Unifier Data Reference Guide</i> for the list of codes). This is a required field, even if you are entering a User Preferences Template Name (if the date format specified in the template is different from this cell, the template selection will take precedence).
Address	Enter the code for the company address to use with this user. (Refer to the <i>Unifier Data Reference Guide</i> for the list of codes)
Template Name	If you have created User Preferences Templates, enter the name of the template to use for this user.
Status*	Enter a status code for this user: Active=1, On-Hold=2, Inactive=0
Disable Mobile Status	To allow a user to access the Unifier Mobile application, enter 0 in this field or leave it blank. (If no value is specified, the system sets the value to 0 by default.) If you want to prevent a user from accessing Unifier Mobile, enter 1.

* = required

Note

- Do not delete or change the order of the columns; this will make the file invalid.
- Valid information must be entered into columns corresponding to required fields. An asterisk in the column header indicates required fields. (Expand the columns to see the asterisks if necessary.)
- For non-text-entry fields (Time Zone, Date Format, Address), enter the corresponding code. Valid codes are found in the *Unifier Data Reference Guide*.
- Non-required fields (column heading does not have an asterisk) are optional. You may enter information or leave these fields blank.
- The length of "Username" cannot exceed 64 characters and cannot include the following:
 - Space
 - Non-printable characters

To import the CSV file into the system:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **User Administration**, and then select **Company Users**.
 3. From the toolbar, select **New**, and then select **Import** to import the completed CSV file.
 4. Select **Browse** and navigate to where you saved the file.
 5. Select **OK** to import. New users are created and existing users are updated.
 6. Open the User record and set up the Groups, Permissions, Projects/Shells, and Proxy tabs as needed.
- If any rows contain errors, no rows are imported. Error messages are listed in the CSV file.

To fix import errors:

If you receive the Confirmation message:

Import could not be completed. Do you want to download a file with errors shown?

1. Select **Yes** to open the CSV file.
2. Fix the rows that contain errors.
3. Re-import the file.

Exporting User Records

You can export a CSV file with current user information.

To export a CSV file containing all user records:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. From the **File** menu, select **Export**, and then select **All**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download it manually.

To export a CSV file containing selected user records:

1. In the Company Users log, select one or more users to export (press the Ctrl or Shift keys to select multiple users).
2. From the **File** menu, select **Export**, and then select **Selection**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download it manually.

Managing User Login Information (Security Tab)

Before you activate a new user, you must enter a Login Username. To allow the user to sign in to the system, you must also add an initial password. You can also change the user's password here, for example if the user has forgotten their password. If you change a user's password, they will automatically be logged out and will need to log in again using their new password.

Users can change their password later in the User Preferences window.

Note

- The **Security** tab is not available if Unifier is integrated with SSO (LDAP, OAM).
- To retain the Admin options when you log in to LDAP, you must create a new Admin (for LDAP log in) and add the new Admin to the company user/group. Only one company Admin can be added, with all pertinent privileges.

To add or manage user login information:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**.
3. Depending on the type of user, select either **Company Users** or **Partner Users**.
4. In the **Users** log, select a user, and select **Open**.
5. In the **Edit User** window, select the **Security** tab.
6. Complete the fields as shown in the following table.
7. Select **Apply** to save changes, or select **OK** to save and exit.

In this field:	Do this:
Login Username	Enter the Users Sign In ID (required). This value can be changed by the System or Company Administrator but not by the User.
Password	Enter the value the user will use as their Sign In ID. Passwords must match the company Security/Password policy, if one is in force.
Confirm Password	Confirm password by re-entering.
View Password Policy	Select this link to verify the password is conforming to your company's Security/Password policy (Company Settings, Password Policy tab). A password that does not comply will generate a warning message.

Managing a User's Group Membership (Groups Tab)

You can manage a user's group membership from the Groups tab of the Edit User window. This tab displays all the groups the user is a member of, and allows you to quickly add or remove groups. The default groups are Company Administrators, Project Administrators, Shell Administrators, and Support. For information about adding or managing groups, see [Adding and Managing Groups](#).

Note

If you are using OIM to add users to your company, you will still have to use these instructions to add users to groups.

To add a user to a group:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**.
3. Depending on the type of user, select either **Company Users** or **Partner Users**.
4. In the **Users** log, select a user, and select **Open**.
5. In the **Edit User** window, select the **Groups** tab, and select **Add**.
6. In the User/Group Picker, select the **Group**, and select **Add**.
7. After the group appears in the Selected Users/Groups section, select **OK** to save your changes.

To remove a user from a group:

On the **Groups** tab, select a group, and select **Remove**.

Editing User Permissions (Permissions Tab)

This procedure lets you grant or remove specific user permissions. This is useful if a user needs special permissions that are not likely to be repeated with other users, or the user is not part of a group. You can also specify permissions for groups (if you add the user to the group, the user will automatically inherit all group permissions) or control permissions through Access Control.

To edit a user's permission settings:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**.
3. Depending on the type of user, select either **Company Users** or **Partner Users**.
4. In the **Users** log, select a user, and select **Open**.
5. In the **Edit User** window, select the **Permissions** tab.
6. Select a plus sign to expand the choices, and scroll up or down as needed.
7. Select the Permission module in which to grant permissions. Choose the Permission level in the bottom window.
8. Select **OK** to save.

To copy permissions from a template:

1. In the Permissions tab, select **Copy Permissions**.
2. Select the template, and select **OK**.
All permissions settings in the user record will be overwritten and replaced with the permission settings from the template.

Viewing User's Project and Shell Membership (Project/Shell Tabs)

Users can be added to projects and shells, which gives them access to participate in them. You can view a user's project membership in the Projects/Shells tab.

To view a user's project or shell membership:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**.
3. Depending on the type of user, select either **Company Users** or **Partner Users**.
4. In the **Users** log, select a user, and select **Open**.
5. In the **Edit User** window, select the **Projects/Shells** tab.
This tab displays the list of projects and shells of which the user is a member.

Users cannot be added or removed from projects or shells here.

Designating a Proxy User (Proxy Tab)

A Site/Company Administrator can designate a user to be a proxy user for another user.

- Proxy users can be granted permission to access another user's account and perform various functions on that person's behalf if that person is unavailable, such as on vacation.
- Proxy users who are active (Status: **Active**) receive email notification of tasks to perform as proxy. This applies during the specified time period, using the Start Date/Time and End Date/Time.
- Proxy users have access to all the records, settings, and functions of the original user. A proxy user signed in to another's account cannot change Preference settings. The Audit logs reflect the actions taken by a proxy user as "on behalf of" the original user.

Note

If the specified proxy user has Send notifications in a single daily digest selected on the Options tab of their User Preferences, it will impact when they receive notification of the task they must perform as proxy. Ensure that the Send notifications in a single daily digest checkbox is deselected for the proxy user if that user must receive the task notifications immediately.

To designate a proxy user:

Note

The following applies to Company Users, Partner Users, and Groups.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. Select a user from the Users log, and select open to open the **Edit User** window
4. Select the **Proxy** tab.
5. Set the options per following descriptions.

Do not allow Proxies

The Site/Company Administrators, Company users, and Partner users) are permitted to select the **Do not allow Proxies** option.

Note

This option is read-only in the user's User Preferences window.

Users can add proxy users in their User Preferences window only if the Site/Company Administrator has not checked the **Do not allow Proxies** option in the Proxy tab of Edit User window.

Users who can act as my Proxy

This section of the Proxy tab lists the users who can act as proxy and lets you add, adjust the settings, remove proxies, and view the proxy login history.

Note

You can select/designate more than one proxy user.

Add

The Company Administrator can assign other users to act as proxies to your account, if you are unable to do so.

To add a proxy:

1. Select **Add** to open the **Proxy User Settings** window.
2. Click **Select** to open the **Users/Group Picker** window.
3. Select users, select **Add**, and then select **OK** to go back to the **Proxy User Settings** window.
4. Enter the Start Date/Time and End Date/Time values.
5. Select the **Status (Active)**, and select **OK**.

If enabled by the Administrator, Partner Users can add Owner Company Users as proxy users.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. Select a user from the Users log, and select open to open the **Edit User** window
4. Select the **Proxy** tab.

5. Select **Add** to open the **Proxy User Settings** window.
6. Click **Select** to open the **Users/Group Picker** window.
7. Select the desired company from the **List Names from** list.
8. Select users, select **Add**, and then select **OK** to go back to the **Proxy User Settings** window.
9. Enter the Start Date/Time and End Date/Time values.
10. Select the **Status (Active)**, and select **OK**.

Settings

Use this option to select an existing proxy and change the user settings of the proxy, such as start and end date/time. To change the user settings of the proxy, select **Settings** and follow the prompts.

The system sets the values in the time-related fields based on the user's preferred data and time formats.

Note

If you do not specify a start or end date, the proxy user can access your account immediately and their access privileges will not expire.

You can select **Active** to activate proxy's access. To disable proxy's access, select **Inactive**.

Remove

You can use this option to remove a selected proxy. To remove a user as a proxy, select the proxy from the list, and select **Remove**.

Proxy Login History

Use this option to view the following information about the proxies:

- Name
- Login Date
- Logout Date

The last login information appears on top.

Note

The **Sign Out** link at the upper-right portion of the Unifier window allows a proxy's session to end.

Managing Project- or Shell-Level User Information

As described in [Updating Company Settings on the Security Tab](#), you can indicate whether to show or hide a user's profile. If you show a user's profile, you can also decide whether Company or Partner users (or both) are allowed to save the profile when they are working offline with the Unifier Mobile app.

You can also specify at the project or shell level whether the information for an Active user is shown.

Note

Portal and Collaborator users do not have access to Company and Partner user information.

To show or hide a user in the shell directory:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Users**.
3. In the **Users** log, double-click the applicable user name.
4. In the **Edit Projects User** dialog box, select the **Show user on the Projects Directory** option, and then select **OK**.

Sending Email to a Company User

This is available for company users only and is not available for partner company users.

To send an email to a company user:

1. Navigate to the Company Users log.
2. Select one or more names in the log.
3. From the toolbar, select **Send email**.
Your email client window opens, where you can then send an email to the selected users.

Unlocking a Locked User Account

A user account can be locked if the user exceeds the maximum sign in attempts, or if the user has not signed in after a specified number of days. The users who are locked out of the system will receive a message stating the condition that needs to be corrected.

The password criteria are configured on the **Password Policy** tab of the **Company Settings**.

To unlock a locked user account:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users** or **Partner Users**.
3. Select the user from the log.
4. Select **Open**, and select the **Security** tab. When a user's account is locked, the Unlock account checkbox appears selected. This checkbox is provided only if the user's account is locked. Otherwise, it does not appear on the user's Security tab.
5. Deselect the **Unlock account** checkbox.
6. Select **Apply** to save or **OK** to save and exit.

Changing the Status of Multiple Company Users

If you want to change the status of multiple users at the same time, you can select the users from the log and change the status for all those users. This eliminates the need for you to open each user record to modify the user status.

The **License Manager** controls the number of active users within a system.

To change the status of multiple company users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users**.
3. Select the users whose status you want to change.
4. Choose **Status** and one of the available statuses (Active, Inactive, On-Hold).

Viewing or Printing the User Audit Log

To view the log for a user record:

1. From the **Users** log, select the applicable user.
2. From the **View** menu, select **Audit Log**.
The Audit Log lists each event associated with the user.
3. To view details for a specific event, double-click it.
For reference, the details also include the current time zone of the user viewing the log.

To print the log:

In the Audit Log, select **Print** . A PDF file of the audit log is created.

Depending on your browser, the file will be downloaded automatically to your system, or you will be prompted to download it manually.

Reactivating Users

When a company adds a Partner Company and Partner Users to specific company-level and project- or shell-level features, the Partner Company and Partner Users are automatically granted the same level of access to the applicable features.

Note

- Project and shell access is limited to users (including Sponsor Company users or Member Company users) who are chosen for the project or shell and permissions are configurable for each company.
- These processes apply to the proxy users.

Go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **User Administration**, select **Partner Users**, and select a user to open the **Edit User** window. In this window:

- If you (the administrator) deactivate a Partner Company user from a project or shell that the Partner Company was associated with and later decide to reactivate the Partner Company user for that project or shell, the status of that Partner Company user changes to what it was prior to the deactivation of that Partner Company user.
- If you (the administrator) remove a Partner Company from a project or shell and later decided to re-add the Partner Company to that project or shell, the status of the Partner Company users changes to what it was prior to the removal of the Partner Company. In this scenario, the administrator must manually activate the Partner Company user at the company level (global), and the system automatically changes the status of the Partner Company user to what it was prior to the removal or deactivation.

Important Information about Reactivating Users

When you deactivate the Partner Company users who are active in a project or shell and later activate the same users, the system reverts the status of the users to "Active" or whatever the user's status was prior to the deactivation.

When you deactivate a Partner Company in Company Workspace, the system removes the Partner Company that exists as a Member Company (in a project or shell). If you deactivate a Member Company from the Partner Company list in the Company Workspace, the system removes the Member Company from all associated projects and shells and sets all Member Company users as "Inactive." When you reactivate the Member Company at the company level, the system adds the Member Company to all previously associated projects and shells; however, the Partner Company users remain as Inactive.

If a Partner Company is a member of a project or shell, but the Partner Company users are all set as "Inactive" in that project or shell, when you (the administrator) decide to reactivate the Partner Company users at the company level, the status of the Partner Company users at the shell level remains as "Inactive."

You can reactivate a deactivated Member Company at the company level (**Company Workspace** tab).

Creating Partner Companies, Users, and Permission Settings (On-Premises Only)

Creating Partner Companies

A Company Administrator of an Owner Company (Sponsor Company) can create multiple partner companies.

To create partner companies, complete the steps outlined in [Adding a Partner Company](#).

The **Partner Users** node contains multiple *menu* options that you can use to perform steps such as creating new users manually or through import or updating types. The *toolbar* options provide access to some of the same features as well as providing quick access to changing the Status of a user account.

The **Update User Type (To Portal and To Standard)** option, collectively, work as a bulk action on one or more selected user rows by enabling you to update the type of user. For example, you can select one row, or multiple rows, select **Update User Type**, and change the user type to portal, or standard, by selecting **To Portal**, or **To Standard**.

Creating Users for the Partner Company

To add users to a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. From the toolbar, select **New**, and then select **Manual**.
4. In the **Edit User** dialog box, enter data in the fields within each tab.
 - **General**
 - a. Enter the name of the Partner Company (the system conducts a search and displays a filtered list of partner companies).
 - b. Alternatively, you (Company Administrator) can select the name of the Partner Company from the list by selecting the arrow.
 - c. Fill out the fields under "Contact Information as in Company Directory."
 - d. Select the Status, and select **OK**.
 - **Security:** To enter the password for the user.
 - **Groups:** To add the user to an existing group.
 - **Permissions:** To assign permissions to various modules in the system.
 - **Projects/Shells:** The content in this tab is blank when creating a user, and any existing content varies based on the Projects/Shells that the user has access to.
 - **Proxy:** To manage Proxy settings.

If the user type attribute is not mentioned when creating the user, the user type for that user will be set to Standard user type by default.

When you are creating a user, the User Type drop-down list is defaulted to Standard user, but you can change the User type to Portal.

The Attribute "Earned Value Management" displayed is unchecked by default. If the user checks this option, the user will be granted access to the Earned Value Management module. This checkbox will be disabled for Portal type of users. The licensing purchased by your organization determines whether EVM is included.

Note

The checkbox for Earned Value Management users will be seen only when the Earned Value Management module is loaded.

In the **License Manager**, the Company user and Partner user are considered Standard users in terms of license count and combined count for License Terms and Current Usage. The **License Manager** landing page will define a gauge chart for all the following license types, which varies depending on the licensing purchased by your organization:

- Standard Users
- Portal Users
- Earned Value Management Users
- Collaborator Users

Separate counts for Portal users and Earned Value Management (EVM) users are shown for License Terms and Current Usage. These counts will depend on:

- The licensing purchased by your organization,

- Whether a particular Company user is marked as Portal user, and
- The Earned Value Management user in User Administration.

If there are more users with accounts than the product is licensed for, the calculations in the **Active Named Users** fields might be higher in the **Current Usage** sections versus the **License Terms** sections. The excess or surplus (overage) is calculated in the same way as the Standard users.

The Site Administrator can edit the license terms and view the audit log for the users by selecting **Settings**.

When editing the user count, the Site Administrator will have to put a combined number for active named users.

Depending on the licensing purchased by your organization, the Site Administrator will also be able to edit the Portal users and EVM users count by using the **General** and **Notifications** tabs on the License Terms window.

For users other than the Site Administrator, only the Notifications tab will be available to be edited.

Permission Settings for Partner Companies

To set permissions for partner companies:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **User Administration**, and then select **Partner Companies**.
4. In the **Module Permission Settings** window, determine the level of permission for each user (in the Partner Company) that is listed.
You can select **Add** (to add a new name), **Modify** (to change the permission setting for a user, by way of **Permission/Access Control** window), or **Remove** (to delete a name) in this window.

If you (Company Administrator) create a Partner Company and select **Inactive** for the Partner Company **Status**, the users that you add for that Partner Company will be inactive. When the contract with a Partner Company ends, you can select **Inactive** for the Partner Company **Status** and inactivate the contract.

Creating Partner Companies and Users (Cloud Only)

A partner company is a consultant, contractor, or vendor company that is associated with an owner company. A partner company may work on some or all the projects and shells that the owner company commissions.

Creating partner companies and users requires you to perform a series of tasks in both Primavera Unifier and Primavera Administration.

For the prerequisites and tasks to create partner companies and users, see the *Primavera Administration Identity Management Guide*. After completing the tasks in that guide, complete the steps outlined in [Adding a Partner Company](#) and [Adding a Partner Company User](#).

Adding and Managing Partner Companies

An Owner Company (also referred to as a Sponsor Company) may work with one or many Partner Companies (for example, subcontractors, vendors, and so on) to work on shells or company-level activities. Company Administrators can manage Partner Companies and users. (Depending on your environment, your Oracle Cloud Administrator might need to add the users.) You can grant Partner Company users access to specific company-level and shell-level features.

When a Partner Company user is added to a shell, the system verifies that the user's company is a Member Company. If not, the system adds the Partner Company. When a Partner Company is removed from a shell, the Partner Company users are automatically set to Inactive.

To access the Partner Companies page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed. Before the first Partner Company is added, the page displays **Add your first partner company**.

After at least one company is added, the page displays two panes. The left pane displays a list of the current Partner Companies available in the system, while the right pane displays more information about the company selected in the left pane.

At the top of the left pane, you can use the **Search** option to find a company in the list by using its name. You can filter the list using the **Active**, **Inactive**, and **Location** options, and you can use **Sort By** to sort the list in ascending or descending alphabetical order.

If you have the applicable permissions, you can add Partner Companies, update their information, and change their status.

You can use the **Audit Log** to view a record of changes made, the date the change was processed, and the name of the user that made the change. The system also lets you search through and print the log.

Adding a Partner Company

Adding a Partner Company to the list lets you work with Partner Company users within the system.

Note

When a Partner Company user is added to a shell, the system verifies that the user's company is a Member Company; if not, the system adds the Partner Company. When a Partner Company is removed from a shell, the Partner Company users are automatically set to **Inactive**.

When you initially add a Partner Company, the address is designated as the **Headquarters** and the entry is set to **Active**. After creating the initial entry, you can add additional addresses—including a different **Headquarters** designation—identify a **Contact** and add additional information regarding **Support** and **eLearning**. For more information, see [Updating Partner Company Information](#). If your environment supports it, you can also establish **Password Complexity** and **Password Rules** parameters.

To add a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed.
3. Choose one of the following:
 - If this is the first Partner Company, select **Add** below the **Add your first partner company** line.
 - To add an additional Partner Company, select **Add** +.Both options access the guided process drawer for adding a partner company.
4. In the **About** step, complete the following:
 - **Name:** Enter a Partner Company name, up to 64 characters. It can include alphanumeric characters, spaces, and punctuation.
 - **Short Name:** Enter a short name, up to 60 characters. The Short Name is a unique, abbreviated form of the Partner Company name that is used throughout the system in place of the Partner Company name.
 - **DUNS:** (Optional) Enter the nine-digit Data Universal Numbering System (DUNS) number assigned to the Partner Company by Dunn & Bradstreet.
 - **Home URL:** (Optional) Enter the main Uniform Resource Locator (URL) for the Partner Company. The system validates the specified URL based on the Uniform Resource Identifier (URI) provided by the Site Administrator and on URL standards. For more information, see the **URL Guidelines** table below.
 - **Help URL:** (Optional) Enter an additional URL to point to internal documentation regarding company policies or practices, an intranet site, or other internal information that you choose. The system validates the specified URL based on the URI provided by the Site Administrator. For more information, see the **URL Guidelines** table below.
 - **Description:** (Optional) Enter information that describes the Partner Company, such as its line of business.
5. Select **Continue**.
6. In the **Address** step, complete the following fields:

 Note

If your environment uses the Construction and Engineering Lobby and identifies a company with the same company name, you can select **Use this** to select the identified company and address, or you can complete the following fields.

- **Country:** Select from the list.
 - **Address line 1:** Enter the address.
 - **Address line 2:** (Optional) Enter additional address information.
 - **City:** Enter the name of the city.
 - **State:** Enter the name of the state or region.
 - **Zip:** Enter the ZIP Code or postal code for your location.
 - **Phone:** (Optional) Enter a phone number.
 - **Fax:** (Optional) Enter a fax number.
7. Select **Add**.

URL Guidelines

Protocol	Length	Characters
Must use an approved protocol, followed by ://, and then followed by a host name or domain name. The domain name must include at least one dot and a valid top-level domain such as .com, .net, .org.	4000 characters or fewer	Valid characters include alphanumeric characters and special characters such as -, _, ~, /, ?, :, @, &, =, +, \$, #.

Updating Partner Company Information

After you add a Partner Company, you can add additional addresses—including a different **Headquarters** designation—identify a **Contact**, update **Password Complexity** and **Password Rules** parameters, and add additional information regarding **Support** and **eLearning**. If your environment supports it, you can also update **Password Complexity** and **Password Rules** parameters.

Note

When a Partner Company is added, the system automatically copies the password policies from the Owner Company if your environment supports it.

To update information for a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed.
3. In the left pane, locate and select the applicable Partner Company.
4. To update information, select **Edit**.

Note

While you are updating information for the selected Partner Company, you can also update the **Addresses** section. However, you can also update the **Addresses** section separately, as described later in this topic.

5. Use the following guidelines for the **About** section:
 - **Name:** Enter a Partner Company name, up to 64 characters. It can include alphanumeric characters, spaces, and punctuation.
 - **Short Name:** Enter a short name, up to 60 characters. The Short Name is a unique, abbreviated form of the Partner Company name that is used throughout the system in place of the Partner Company name.
 - **Contact:** (Optional) Select a user from the User Picker list. The list is generated from the list of active users assigned to the selected Partner Company.
 - **DUNS:** (Optional) Enter the nine-digit Data Universal Numbering System (DUNS) number assigned to the Partner Company by Dunn & Bradstreet.

- **Home URL:** (Optional) Enter the main Uniform Resource Locator (URL) for the Partner Company. The system validates the specified URL based on the Uniform Resource Identifier (URI) provided by the Site Administrator and on URL standards. For more information, see the **URL Guidelines** table below.
 - **Help URL:** (Optional) Enter an additional URL to point to internal documentation regarding company policies or practices, an intranet site, or other internal information that you choose. The system validates the specified URL based on the URI provided by the Site Administrator. For more information, see the **URL Guidelines** table below.
 - **Description:** (Optional) Enter information that describes the Partner Company, such as its line of business.
6. If your environment supports it, in the **Password Complexity** section, enter values in the applicable fields.
A value of 0 indicates that a restriction does not apply.
- For the **Minimum Special Character** field, valid special characters include: [{ ~ ! @ # \$ % ^ & * () - _ = + ; : ' " , < . > / ? }] }
7. If your environment supports it, in the **Password Rules** section, select the applicable options.
For the **Password recovery secret questions setup required** option, users are prompted to set up security questions for password reset upon first login. Existing users are prompted to set up security questions upon the next login.
8. Use the following guidelines for the **Support Information** section:
- **Email:** Enter an email address for the Partner Company's internal support.
 - **Phone:** Enter a phone number for Partner Company's internal support.
 - **Instructions:** Enter additional information on how to use the Partner Company's support information.
 - **Email Notifications:** Enter additional information that should appear at the bottom of email notifications. This field supports simple html formatting and can include a hyperlink.
Example:


```
<p>For PartnerCompany support, contact <a
href="mailto:support@yourcompany.com">support@partnercompany.com</a> or
1-800-555-1212.</p>
```


which will display in the bottom of record email notifications as:

For PartnerCompany support, contact support@partnercompany or 1-800-555-1212.
9. Use the following guidelines for the **eLearning** section:
- **URL:** Enter the URL for eLearning access. Oracle recommends that you include the entire address.
 - **Label:** Enter that label that is used for the preceding URL. The label can display the actual URL, or you can a different label. This label appears as a hyperlink to users.
 - **Contact email:** Enter an email address that you want users to use if they need to contact someone. Enter a valid email format, for example, elearn@partnercompany.com.
 - **Instructions:** Enter instructions or other information such as a contact phone number. This field does not support html formatting.
10. Select **Update**.

11. To update or add an address in the **Addresses** section, select **+ Add** or select **Edit** , whichever is applicable, and use the following guidelines to complete the addition or update:
 - **Address type:** Select from the list.
 - **Attention:** (Optional) Select from the list. The list contains active users from the Partner Company and is sorted alphabetically by first name.
 - **Country:** Select from the list.
 - **Address line 1:** Enter the address.
 - **Address line 2:** (Optional) Enter additional address information.
 - **Address line 3:** (Optional) Enter additional address information.
 - **City:** Enter the name of the city.
 - **State:** Enter the name of the state or region.
 - **Zip:** Enter the ZIP Code or postal code for your location.
 - **Phone:** (Optional) Enter a phone number.
12. Select **Update**.
13. To delete an address from the **Addresses** section, select **Delete** , and then select **Delete** when the confirmation message appears.

URL Guidelines

Protocol	Length	Characters
Must use an approved protocol, followed by <code>://</code> , and then followed by a host name or domain name. The domain name must include at least one dot and a valid top-level domain such as <code>.com</code> , <code>.net</code> , <code>.org</code> .	4000 characters or fewer	Valid characters include alphanumeric characters and special characters such as <code>-</code> , <code>_</code> , <code>~</code> , <code>/</code> , <code>?</code> , <code>:</code> , <code>@</code> , <code>&</code> , <code>=</code> , <code>+</code> , <code>\$</code> , <code>#</code> .

Removing (Deactivating) a Partner Company

If you no longer want users in a Partner Company to participate in your company or shell areas, you can set the status of the Partner Company to **Inactive**.

- The system automatically deactivates Partner Company users that have been added as users either under your company (Partner Users node) or in any shells.
- If the Partner Company being deactivated has previously been added to a shell as a "member company," the company remains visible on the Partner Companies page, but users are deactivated.
- These deactivated users cannot be reactivated unless the Partner Company status is set back to **Active**.

To deactivate a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed.
3. In the left pane, locate and select the applicable Partner Company.

4. Select **Deactivate**.
5. When the confirmation message appears, select **Deactivate**.

Reactivating a Partner Company

If you want to reinstate users in a Partner Company for participation in your company or shell areas, you can set the status of the Partner Company to **Active**.

To activate a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed.
3. In the left pane, locate and select the applicable Partner Company.
4. Select **Activate**.
5. When the confirmation message appears, select **Activate**.

Viewing a Partner Company Profile

Partner Company details are managed by the Company Administrator for the company, or the Site Administrator. You can view the details.

To view the company profile of a Partner Company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Companies**. The Partner Companies page is displayed.
3. In the left pane, locate and select the applicable Partner Company. You can use the **Active**, **Inactive**, and **Location** options to filter the list of companies displayed.

The right pane displays information about the company selected in the left pane.

Adding and Managing Partner Company Users

Adding a Partner Company user lets you grant them access to your company features in the company workspace or projects and shells. You can manage their status, group membership, and permissions. Users can only have access to self-service portal login.

User Type

As part of the log attributes, the **User Type** column in the **Users** log identifies the type of user per following:

- **SYS User Type/Standard:** The SYS User Type/Standard User, which refers to both Company and Partner users, can have access to all modules, except Earned Value Management (EVM). (The licensing purchased by your organization determines whether EVM is included.) If the Earned Value Management component is selected for a Standard User, it will be available to the Standard User.

- **SYS User Type/Collaborator:** The SYS User Type/Collaborator User can have access to all modules, except Earned Value Management (EVM). (The licensing purchased by your organization determines whether EVM is included.)
- **SYS User Type/Portal:** The SYS User Type/Portal User can only have access to the self-service portal login.

Adding a Partner Company User

Partner Company user details are managed by the Site Administrator or the company administrator for the Partner Company. As the company administrator for your company, you can add Partner Company users to your own company at the company or project/shell level and control their status and permissions within your company.

If a Partner Company user is added to a project/shell, the user is automatically added to the Partner Company Users log. Additionally, the system verifies that the user's company is a Member Company. If not, the system adds the Partner Company.

The **License Manager** controls the number of active partner company users within a system. See [Working with the License Manager](#).

By default, new users will have a status of **Active**. You can change the status or other user detail information selecting the user from the list and selecting **Open**.

To access the Partner Users log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. To open an existing user record, select a user from the log, and select **Open**.

Note

If a **User Attributes** form has been imported, the columns that appear in the Users Log can vary. If designed in uDesigner, the log can include navigation in the left pane. This navigation allows you to filter the display of users listed in the log. If you decide that you want a standard log to display, you can remove the navigation from the log in uDesigner. Also, the search criteria in the Find window and sort order can also vary depending on what was added to the User log design in the User Attributes form.

To add a Partner Company user:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. Select **New** from the toolbar to open the Edit User window and complete the form.
4. In the Edit User window, complete the fields of the **General** tab as discussed in the following table.
5. Select the **Security** tab.
You must also add a login user name before saving the record. See [Managing User Login Information \(Security Tab\)](#).

At this point, you can activate the user, save the record, or complete the rest of the tabs:

- **Groups:** You can add the user to existing groups. The default groups are Company Administrators, Project Administrators, Shell Administrators, and Support. The user automatically inherits group permissions. See [Manage a user's group membership \(Groups tab\)](#).
 - **Permissions:** You can configure individual permission settings for the user in this tab. See [Editing User Permissions \(Permissions Tab\)](#). Alternatively, you can assign the user to a group (the user will automatically inherit group permissions), or assign permission through Access Control. If you are adding Collaborator users, you can set permissions so that they can view existing user-defined reports (UDRs) and custom reports, and they can create UDRs.
 - **Projects/Shells:** This tab lists the projects/shells to which the user has been added and is view-only. See [View User's Project and Shell Membership \(Project/Shell Tabs\)](#).
 - **Proxy:** You can add or view the user's proxy users in this tab. See [Designating a Proxy User \(Proxy Tab\)](#).
6. Select **Apply** to save changes, or **OK** to save and exit the window.

In this field:	Do this:
First Name, Last Name	Enter the first and last name of the user. These are required fields.
Title	Enter an optional company title for the user.
Email	Enter the user's email address, which will be used to send system notifications to the user, and will display in the user's contact information. This is a required field.
Work Phone	Enter the user's work telephone number.
Mobile Phone	Enter the user's mobile telephone number.
Home Phone	Enter the user's home telephone number.
Pager	Enter the user's page number.
Fax	Enter the user's fax number.
Address	To add a company address to the user profile (from Company Information), click Select .
Time Zone	Choose the default time zone for the user. This can be changed in the User Preferences window.
Language	Select a language from the drop-down list. Note The languages listed are the active languages selected by the administrator in the Configuration - Internationalization log.
Date Format	This setting controls the display of dates on reports, business process forms, and so on. This can be changed in the User Preferences window.

In this field:	Do this:
User Type	Select Standard , Collaborator , or Portal . The Standard User and the Collaborator User (which is a type of Partner User) have access to all modules, except Earned Value Management (EVM). (The licensing purchased by your organization determines whether EVM is included. If the Earned Value Management component is selected for a Standard User, it is available to the Standard User.) The Portal User only has access to the self-service portal login.
Earned Value Management	This option is unchecked (cleared) by default. If you select this option, the user will be granted access to the Earned Value Management module. (The licensing purchased by your organization determines whether EVM is included.) This checkbox will be disabled for the Portal type of users.
Status	New users are Active by default. Status can be Active, Inactive or On-hold. Neither Inactive nor On-Hold users can sign in: • Active: User is listed in Project or Shell Directory, in User/Group Picker, User can sign in and participate in project/shell. • Inactive: User's name does not appear anywhere for selection on any project-or shell-related functions or User Picker. User cannot sign in but they can be given permissions and added to groups. • On-hold: User can be added to a project/shell and assigned as a participant in a business process workflow but cannot sign in. Normally used to pre-assign users to a new project/shell before activating it. Active and On Hold users will be counted against your user license terms; Inactive users will not.
Disable Mobile Access	This option is unchecked (cleared) by default. If you want to prevent the user from accessing the Unifier Mobile application, select this option.

Managing Partner Company User: Status, Groups, and Permissions

User details such as contact information are managed for individual users by the company administrator for the Partner Company.

① Note

Partner Company users can be granted Company Administrator permissions if you add them to the Company Administrators group. See [Managing a User's Group Membership \(Groups Tab\)](#).

You can manage the following information for Partner Company users:

Status: You can change the Partner Company user to Active, Inactive, or On-Hold.

- *Active* users are eligible to participate in company- or project- and shell-level activities to which they have permissions.
- *On-Hold* users appear on user pickers and can be added to business process set ups and project or shell user lists. However, the user cannot log onto the system until they are activated.
- *Inactive* users will not appear in user pickers. If you inactivate Partner Company users, they automatically become inactive throughout the system, including in any projects and shells to which they belong. After inactivating, if you then change the status back to Active, their status in projects and shells will not automatically change back to Active; you will need to reactivate them at the project or shell level.

Groups: You can add a partner company user to a company-, project-, or shell-level group as needed.

Permissions: You control permission access for partner company users within your company.

To edit a Partner Company user's details:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**. The Users log opens.
3. Select a partner company user, and select **Open**. The Partner Company Edit User window opens.

Note

If a User Administration design has been imported, the data elements that appear in the General tab of the User Properties can vary.

4. Do any of the following:
 - To change the status of the Partner Company user, select the **General** tab, and change the **Status** field.
 - To manage a Partner Company user's group membership, select the **Groups** tab. Select **Add** or **Remove**.
 - To manage a Partner Company user's permissions, select the **Permissions** tab. Grant permissions to the user as needed. (In addition, when using Access Control, both Partner Company users and Sponsor Company users can be added to a module.)
5. Select **OK** to save and exit.

Changing the Status for Multiple Partner Users

If you want to change the status of multiple users at the same time, you can select the users from the log and change the status for all those users. This eliminates the need for you to open each user record to modify the user status.

Note

The **License Manager** controls the number of active users within a system.

To change the status of multiple partner users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Partner Users**.
3. Select the users whose status you want to change.
4. Choose **Status** and one of the available statuses (Active, Inactive, On-Hold).

Importing and Exporting Company and Partner Users

Importing and Exporting for Company Users

When the direction for the Data Element (DE) "uuu_user_company" is set to **Input/Both**, the DE "Company" will be available in the CSV when the user performs **Export Structure**.

When the direction for the DE "uuu_user_company" is set to **Output**, the CSV retrieved through the **Export Structure** action will not have the DE "Company". In this scenario, the CSV can be used to create Company Users.

If the DE "Company" is present in the CSV, the user must include the Owner Company name to complete the CSV import. The system will not validate because the value in the DE "Company" is ignored.

Importing and Exporting for Partner Users

When the User Attributes form is present, the following conditions apply:

The **Partner Users** log lets you export and import, similar to **Company Users** log.

Go to the **Company Workspace** tab, and switch to **Admin** mode.

From the menu bar, select **File**. Select **Export** to see the following sub-options:

- **All**
To export the list of partner users to a CSV file.
- **Selection**
To export a list of selected partner users to a CSV file.
- **Export Structure**
To export the structure for partner users to a CSV file based on the DEs set in the **Integration** node of Partner Users.

If the **Direction** is set to **Output**, in uDesigner, then:

- The CSV file generated using **All** and **Selection** will export data, but it will not contain the company attribute in the CSV file.
- The CSV file generated using **Export Structure** will not include company attribute. Such CSV file, when used to create user by way of the **Import** option, will return the error, "Company is required" indicating that a partner user cannot be created without a company attribute.

Similarly, the Import option will be available as a sub-option of the New option in toolbar and menu options (select **File**, select **New**, and then select **Manual** or **Import**). The **Import** option, in this case, lets you perform a bulk import by way of a CSV file. The functionality is similar to the **Import** option on the **Company Users** log.

The user can import partner users through a CSV file only when the company attribute is present. In this scenario, the **Direction** (for **Integration**) must be set to **Input** or **Both** in uDesigner for the user to be able to create partner users by way of the **Import** option.

Note

The company attribute is a required field when creating Partner Users by way of the **Import** option.

When the User Attributes form is not present, the options to import or export will be available the same ways as when a User Attributes form is present.

If the User Attributes form is not defined and the user selects **Export Structure** for Partner Users, the DE "Company" is displayed by default in the exported CSV file.

Reactivating Users

When a company adds a Partner Company and Partner Users to specific company-level and project- or shell-level features, the Partner Company and Partner Users are automatically granted the same level of access to the applicable features.

Note

- Project and shell access is limited to users (including Sponsor Company users or Member Company users) who are chosen for the project or shell and permissions are configurable for each company.
- These processes apply to the proxy users.

Go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **User Administration**, select **Partner Users**, and select a user to open the **Edit User** window. In this window:

- If you (the administrator) deactivate a Partner Company user from a project or shell that the Partner Company was associated with and later decide to reactivate the Partner Company user for that project or shell, the status of that Partner Company user changes to what it was prior to the deactivation of that Partner Company user.
- If you (the administrator) remove a Partner Company from a project or shell and later decided to re-add the Partner Company to that project or shell, the status of the Partner Company users changes to what it was prior to the removal of the Partner Company. In this scenario, the administrator must manually activate the Partner Company user at the company level (global), and the system automatically changes the status of the Partner Company user to what it was prior to the removal or deactivation.

Important Information about Reactivating Users

When you deactivate the Partner Company users who are active in a project or shell and later activate the same users, the system reverts the status of the users to "Active" or whatever the user's status was prior to the deactivation.

When you deactivate a Partner Company in Company Workspace, the system removes the Partner Company that exists as a Member Company (in a project or shell). If you deactivate a Member Company from the Partner Company list in the Company Workspace, the system

removes the Member Company from all associated projects and shells and sets all Member Company users as "Inactive." When you reactivate the Member Company at the company level, the system adds the Member Company to all previously associated projects and shells; however, the Partner Company users remain as Inactive.

If a Partner Company is a member of a project or shell, but the Partner Company users are all set as "Inactive" in that project or shell, when you (the administrator) decide to reactivate the Partner Company users at the company level, the status of the Partner Company users at the shell level remains as "Inactive."

You can reactivate a deactivated Member Company at the company level (**Company Workspace** tab).

Adding and Managing Groups

Company-level user groups can be used to group users who will be using the same functionality in the system and assigned the same Permissions. Anytime a new person comes onto the project or shell, you can assign them to the appropriate groups and their permissions will be set automatically.

There are three default groups created for new companies: Company Administrators, Project Administrators, and Support. You can edit group information and permissions as necessary, and create groups as needed.

For example, you may want to create a "Finance Admin" group and give them permission to create and modify Cost Sheet Templates. Another "Finance User" group may have permission to access and work with project- or shell-level cost sheets, but not the templates. These users may require access to only those modules and reports dealing with finances, but not other areas of the company, project, or shell.

To access user groups:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Groups**.

Create a Group

The following discusses how to create a group.

To create a group:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Groups**.
3. In the Groups log, select **New**.
4. In the Groups window, complete the **General** tab as outlined in the following table.
5. At this point you can also complete the other two tabs:
 - Add user to the groups in the **Members** tab.
 - Add group permissions in the **Permissions** tab.
6. Select **OK** to add the new Group.

In this field:	Do this:
Group Name	Enter a name for the group.
Group Manager	Click Select and select the person responsible for administering the group. This person automatically becomes a member of the Group.
Group Description	Enter a description, such as the group's function or permission level.

Add Users to a Group (Members Tab)

This section discusses how to add and manage a group's membership. You can add company users or partner company users to a group. You can also manage a user's group membership in the Groups tab of the Edit User window of both company and partner users.

To add a user to a group:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Groups**. The Groups log opens.
3. Select a group, and select **Open**. The Groups window opens.
4. Select the **Members** tab, and select **Add**. The User/Group Picker opens. The User/Group Picker displays all Active or On-Hold users from the sponsor company and all Partner Companies. The company affiliation is noted in the Company column on the picker.

Note

If a User Administration design has been imported, the content of the User/Group picker (in User view) can vary. The Find window and sort order can also vary depending on the optional design.

5. Select the user(s) to add to the group. (Press the **Ctrl** or **Shift** keys to select more than one user name.)
6. Select **Add**. Users will appear in the Selected Users box.
7. Select **OK**, and then select **OK** again to close the Groups window.

To remove a user from a group:

From the Groups window, **Members** tab, select the user on the list, and select **Remove**.

Edit Group Permissions (Permissions Tab)

The permissions assigned here will be applied to all members of the group. Users within the group inherit permissions from the group. If a user is in more than one group, the highest level of permissions granted in any group for a module will prevail.

To assign permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **User Administration**, and then select **Groups**. The Groups log opens.
3. Select a group, and select **Open**. The Groups window opens.
4. Select the **Permissions** tab.
You may select the **plus sign** next to a module to expand the options. Scroll up or down, as needed.
5. Select a module in the upper portion of the window, and choose the **Permission level** for that module in the lower portion.
6. Select **OK** to save.

To copy permissions from a template:

1. In the **Permissions** tab, select **Copy Permissions**.
2. Select the template, and select **OK**.
All permissions settings in the user record will be overwritten and replaced with the permission settings from the template.

Delete a Group

Company Administrators can delete an existing user group from the shell. This section describes how to manually delete a user group from a shell.

Note

You can delete a user group from a specific shell template but not from other shells that have been created using the template.

To delete an existing user group:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **User Administration**, and then select **Groups**.
4. Select a user group from the log.
5. Select **Delete**.

Note

System prompts the user asking to confirm deletion of the user group.

6. Select **Yes** to delete the user group.

Integration Users

Integration user refers to a user who is performing integration, using the SOAP and REST services.

Note

Support for SOAP services is deprecated starting with version 23.10.

You (Administrator) can use the **Integration Users** sub-node (under **User Administration** node) to view the list of integrated users, create integrated users, and assign or edit permissions for Document Manager and access protocol (Legacy).

Note

If you create a Support Request (SR) to switch from using Basic Authentication (Basic) to Open Authorization (OAuth) Authentication, as described in Setting Up Integration Users with OAuth Authentication, you must use the Primavera Portal to create integration users; you cannot use Unifier. Additionally, the Status of existing integration users is changed to Inactive.

To access the Integration Users sub-node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.

The **Integration Users** log contains the following elements:

Toolbar options

- **Create**
- **Refresh**
- **Print**
- **Find on Page**

Columns

- **First Name**
- **Last Name**
- **User Name**
- **Status**
- **Description**
- **Auth Type**
- **Timezone**

To view details for a specific user, select the user in the log, select the *gear menu* () , and select **Open**.

The following explains each element in detail.

Creating Integration Users

Note

If you create a Support Request (SR) to switch from using Basic Authentication (Basic) to Open Authorization (OAuth) Authentication, as described in Setting Up Integration Users with OAuth Authentication and V1 Get Token REST Service for OAuth Authentication, you must use the Primavera Portal to create integration users. That is, you cannot use Unifier.

To create an integration user:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.
3. From the toolbar of the **Integration Users** log, select **Create** to open the **Create User** window.

Note

If you are using OAuth Authentication, the **Create** button is dimmed. As explained earlier, you must use the Primavera Portal to create integration users.

4. Fill out the form.
5. Select **Done**.

The following explains each block and field in the **Create User** window:

General block provides general information about the integration user. The **General** block has the following fields:

- **First Name**
- **Last Name**
- **Status**
 - **Active**
 - **Inactive**
- **E-mail**
- **Language** (system default language)
- **Description**
- **Time Zone** (system default time zone)
- **Date Format**

Security block provides the ability to add a user name and password for a user. The **Security** block has the following fields:

- **User Name**
- **Password**
- **Confirm Password**
- **Expiry Duration**
- **Expiry Units**

Permissions block

It provides the ability to determine the permissions that the user has (for modules in the system). The **Permissions** block has the following fields:

Administration

- Company Administration
 - Full Access: This permission will provide full access to the system.
 - Create: This permission will provide access to all the POST services.
 - Update: This permission will provide access to all the PUT services.
 - Get: This permission will provide access to all the PUT services.
- User Administration
 - Full Access: This permission will provide access to adding and maintaining user-level access.
 - Create: This permission will provide access to all the POST services.
 - Update: This permission will provide access to all the PUT services.
 - Get: This permission will provide access to all the PUT services.

Business Process

- Business Process Services
 - Full Access: This permission will provide full access to services related to business processes (BPs).
 - Create: This permission will provide access to all the POST services related to BPs.
 - Update: This permission will provide access to all the PUT services related to BPs.
 - Get: This permission will provide access to all the PUT services related to BPs.
- Non-Workflow Business Process Permissions
 - Update: This permission will provide access for maintaining non-workflow BPs.
 - Get: This permission will provide access to all the PUT services related to non-workflow BPs.
- Workflow Business Process Permissions
 - Update: This permission will provide access to all the PUT services related to workflow BPs.
 - Get: This permission will provide access to all the PUT services related to workflow BPs.
- Update terminated Record Permissions
 - Update: This permission will provide access to all the PUT services related to Terminated BPs.
- Update terminal Record Permissions
 - Update: This permission will provide access to all the PUT services related to Terminal BPs.

Document Manager

- Document Services
 - Full Access: This permission will provide full access to services related to Documents.

- Create: This permission will provide access to all the POST services for Documents, which includes:
 - * Create Documents by Path
 - * Create Documents by Parent Folder ID
- Update: This permission will provide access to all the PUT services for Documents, which includes:
 - * Update Documents Metadata by Path
 - * Update Document Metadata by Document ID
- Get: This permission will provide access to all the PUT services for Documents, which includes:
 - * Get Documents by Path
 - * Get Documents by Parent Folder ID
 - * Get Document by File ID
- Delete: This permission will provide access to all POST services for documents which includes:
 - * Delete Documents by Node ID
- Folder Services
 - Full Access: This permission will provide full access to services related to Folders.
 - Create: This permission will provide access to all the POST services for Folders, which includes:
 - * Create Folder by Path
 - * Create Folder by Parent Folder ID
 - Update: This permission will provide access to all the PUT services for Folders, which includes:
 - * Update Folders Metadata by Path
 - * Update Folder Metadata by Folder ID
 - Get: This permission will provide access to all the PUT services for Folders, which includes:
 - * Get Folders, or Documents, Metadata by Path.
 - * Get Folders, or Documents, Metadata by Parent Folder ID.
 - Delete: This permission will provide access to all POST services for documents which includes:
 - * Delete Documents by Node ID

Reporting

- User Defined Reports
 - Get: This permission will provide access to all the PUT services for user-defined reports (UDRs).

Legacy block

SOAP Services

- The Full Access permission will be supported for all the Legacy SOAP services.

- The checkboxes will be selected by default when Full Access is selected.

Cost

- CBS Services
 - Full Access: This permission will provide full access to services related to Work/Cost Breakdown Structure (WBS/CBS).
 - Create: This permission will provide access to all the POST services related to CBS Services.
 - Update: This permission will provide access to all the PUT services related to CBS Services.
 - Get: This permission will provide access to all the PUT services related to CBS Services.
- CashFlow Services
 - Full Access: This permission will provide full access to services related to CashFlow Services.
 - Create: This permission will provide access to all the POST services related to CashFlow Services.
 - Update: This permission will provide access to all the PUT services related to CashFlow Services.
 - Get: This permission will provide access to all the PUT services related to CashFlow Services.
- CashFlow Permissions
 - Update: This permission will provide access for maintaining permission levels for CashFlow Services.
 - Get: This permission will provide access to all the PUT services related to CashFlow Services.

Fund

- Fund Services
 - Full Access: This permission will provide full access to services related to Fund Services.
 - Create: This permission will provide access to all the POST services related to Fund Services.
 - Update: This permission will provide access to all the PUT services related to Fund Services.
 - Get: This permission will provide access to all the PUT services related to Fund Services.

ScheduleSheet

- **Schedule Sheet Services**
 - **Full Access:** This permission will provide full access to services related to Schedule Sheet Services.
 - **Update:** This permission will provide access to all the PUT services related to Schedule Sheet Services.
 - **Get:** This permission will provide access to all the PUT services related to Schedule Sheet Services.

Activity Manager

- WBS Services
 - Full Access: This permission will provide full access to services related to Work/Cost Breakdown Structure (WBS/CBS).
 - Create: This permission will provide access to all the POST services related to WBS Services.
 - Update: This permission will provide access to all the PUT services related to WBS Services.
 - Get: This permission will provide access to all the PUT services related to WBS Services.
- Activity Sheet Services
 - Full Access: This permission will provide full access to services related to Activity Sheet Services.
 - Create: This permission will provide access to all the POST services related to Activity Sheet Services.
 - Update: This permission will provide access to all the PUT services related to Activity Sheet Services.
 - Get: This permission will provide access to all the PUT services related to Activity Sheet Services.

Master Rate Sheet

- Rate Sheet Services
 - Full Access: This permission will provide full access to services related to Rate Sheet Services.
 - Create: This permission will provide access to all the POST services related to Rate Sheet Services.
 - Update: This permission will provide access to all the PUT services related to Rate Sheet Services.
 - Get: This permission will provide access to all the PUT services related to Rate Sheet Services.

ExchangeRates

- Exchange Rates Services
 - Update: This permission will provide access to all the PUT services related to Exchange Rates Services.
 - Get: This permission will provide access to all the PUT services related to Exchange Rates Services.

Space Manager

- **Space Manager Services**
 - **Full Access:** This permission will provide full access to services related to Space Manager Services.
 - **Create:** This permission will provide access to all the POST services related to Space Manager.
 - **Update:** This permission will provide access to all the PUT services related to Space Manager.

- **Get:** This permission will provide access to all the PUT services related to Space Manager.

Updating Permissions for Integration Users

To update the permissions for an integration user:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.
3. Double-click the name of the applicable user to open the **Update User** window.
4. Select **Permissions** to expand the form.
5. Set the integration user permission for the applicable areas:
 - **Administration**
 - **Business Process**
 - **Document Manager**
 - **Reporting**
 - **Legacy**
 - **Cost**
 - **Fund**
 - **ScheduleSheet**
 - **Activity Manager**
 - **ExchangeRates**
 - **Space Manager**
6. Select **Done**.

Printing and Exporting Integration Users

To print a list of the integration users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.
3. From the toolbar of the **Integration Users** log, select **Print** , select the **Print** option, and follow the prompts.

To export the integration users to CSV:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.
3. From the toolbar of the **Integration Users** log, select **Print**, select the **Export To CSV** option, and follow the prompts.

To export the integration users to Microsoft Excel:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Integration Users**.

3. From the toolbar of the **Integration Users** log, select **Print**, select the **Export To Excel** option, and follow the prompts.

Access Control for Integration Users

To set permissions for Integration Users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **User Administration**.
4. Select **Integration Users**.

You can assign the following permissions:

Permission	Expected Behavior When Checked
Create	When you check this option, the system selects the following permissions: • Modify • View A user with the "Create" permission can add users, modify the user status, and view the user details.
Modify	When you check this option, the system selects the "View" permission. A user with the "Modify Status" permission can modify the user status and view the user details.
View	A user with the "View" permission can view the user details.

Managing Users in Bulk

You can use bulk processing to manage users across a large number of projects and shells. Bulk processing means that you can perform the same action on a large number of user records without having to navigate to each record and perform the same action repeatedly. You can perform this bulk processing at the project or shell level.

Note

For cases where users have the same first and last name, the combination of first name, last name, company, and email address is used to uniquely identify a user. The email address is required on all imported rows.

You can use bulk processing to:

- Add or remove user group assignments
- Add new users
- Change the status of existing users
- Update multiple users in the User logs for Company or Partner users

Change User Group Assignments or Add New Users in Bulk

To add or remove user group assignments in bulk:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable shell log (for the shells that you have configured).
3. Open the shell from the log.
4. In the left Navigator, select **User Administration**, and then select **Groups**.
5. In the **Groups** log, double-click the group that you want to assign users to.
6. On the **Members** tab, select **Add** to open the User/Group picker.
7. Select the user(s) to add to the group, and select **Add** to move users to the **Selected Users/Groups** list. Use Ctrl+Shift to select multiple users simultaneously.
8. Select **OK** when finished.

To add new users to a shell in bulk:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable shell log (for the shells that you have configured).
3. Open the shell from the log.
4. In the left Navigator, select **User Administration**, and then select **Users**.
5. Select **New** to open the User/Group picker.
The Users/Groups are listed based on the company selected in the **List Names from** list at the top of the window.
6. Select the user(s) to add to the group, and select **Add** to move users to the **Selected Users/Groups** list. Use Ctrl+Shift to select multiple users simultaneously.
7. Select **OK** when finished.

Update Multiple Company or Partner Users

Bulk edit of Company or Partner users relies on fields defined in Integration and is available only if the User Attributes form has been imported. For Partner users, the only additional attributes that are available for bulk edit are those that were added by importing the User Attributes form.

Note

Bulk update of status is available through the Status button in the Users log toolbar.

To update multiple users in the Users log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Company Users** or **Partner Users**.

3. From the log, select users to modify.
4. From the **Edit** menu, select **Bulk Edit**.
5. Modify the Bulk Edit form as needed.
6. Select the **Update** checkbox for the fields you want to update. The checkbox is automatically selected when you type into or modify a field. You can deselect it if you do not want to modify the field at this time.
7. Select **Update**. This launches the bulk update of the selected records. The Bulk Actions Status window displays after you select Update. This window lets you monitor the progress of the bulk update. Select OK after all records have processed. Select Cancel if you want to cancel the bulk update in progress.

Creating and Managing User Preference Templates

You can use User Preference templates to configure the default user preference settings for new users. You can also use templates to update existing users' user preferences by "pushing" the preference options. In this way, you can establish a standard for your users' preference settings.

Note

If your Oracle Cloud Administrator used Primavera Administration to create users, you can use a user preference template within Unifier to update user account information such as the time zone and a date format.

Create a User Preferences Template

You can create any number of user preferences templates, each of which must have a unique name and only one of which can be Active. The Active template is used as the default user preference settings when adding new company users. You can use the Active template and any of the Inactive templates to update ("push") preference settings to existing users.

To create a User Preferences Template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **User Preference Templates**.
3. On the **Preference Template** page, select **New**.
4. On the **General** tab of the User Preferences Template dialog box, enter a unique **Template Name** and an optional **Description**.
5. For **Status**, choose **Active** or **Inactive**.
6. On the **Preferences** tab, complete the applicable fields and select the applicable options. The **Email Subscription** section appears exactly like the **Email Subscription** tab of a user's **Preferences** window.
7. On the **Region Format** tab, select the following: Language, Time Zone, Date Format, and Number and Currency Formats. This tab is similar to the **Region Format** tab of a user's **Preferences** window.

Note

The languages listed are the active languages selected by the administrator in the **Configuration - Internationalization** log.

8. Select **Apply** to save changes, or select **OK** to save and close the window.

Update Users with User Preferences Template

You can create multiple user preference templates. As described in [Create a User Preferences Template](#), the Active template is used as the default template when you create a user; however, you can use the Active template and any of the Inactive templates to update ("push") preference settings to existing users (Company users and Partner users).

The Update Users process runs in the background. Depending on the number of records you are updating and the number of projects and shells affected by the user's preferences, it can take a considerable amount of time to complete. The process is finished when the End Date column in the Update History window shows the completion date.

To apply the user preferences template to selected users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **User Preference Templates**.
3. In the **Preference Template** log, select the template that you want to use to process updates.
4. From the toolbar, select **Update Users**, and then select **Users**.
5. In the **User/Group Picker** dialog box, use the picker to select the users that you want to update.
The Users/Groups list displays Active and On-hold Company users and Partner users. You can use the **Find** option to filter the number of users displayed in the list.
6. After selecting the applicable users, select **Add**.
The selected users are displayed in the Selected Users/Groups section. You can select one or more Partner users along with Company users to update their user preferences.
7. To close the **User/Group Picker** dialog box, select **OK**.
8. In the **Preferences** dialog box, select the preferences that you want to update, and then select **OK**.
Only the selected options are updated.
9. When the Confirmation message appears, select **Yes** to continue.
The user preferences of the selected user(s) are updated with the template settings.

To apply the user preferences template to all users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **User Preference Templates**.
3. In the **Preference Template** log, select the template that you want to use to process updates.
4. From the toolbar, select **Update Users**, and then select **All Users**.

Selecting All Users includes all Active and On-hold Company users and Partner users. Users are identified by their unique User ID.

5. In the **Preferences** dialog box, select the preferences that you want to update, and then select **OK**.
Only the selected options are updated. You cannot change the detailed Email Subscription choices because they are determined by the template that you are using to process the update.
6. When the Confirmation message appears, select **Yes** to continue.
The user preferences of all Active and On-hold Company users and Partner users are updated with the template settings.

View Update Users History

The **History** log, which is accessed through the Update Users option, shows the list of the selected users, including the Partner users, and the status of the user preference update for those users. You can view additional details about previous Update Users runs.

To view Update Users History:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **User Preference Templates**.
The Preference Template log opens.
3. From the toolbar, select **Update Users**, and then select **History**.
The **Update Users: History** window lists the following:
 - Requestor: User who initiated the update process.
 - Users: Displays all company sponsored users selected (either the selected users or all users).
 - Submit Date: When the update request was submitted.
 - Start Date: When the update process began.
 - End Date: When the update process finished.
 - Status: Status of the request.
4. Select an instance from the list, and select **Open**.
The History Details window indicates which users were updated by the request, the name of the template that was used, and a list of the attributes that were updated.
5. When you are done, select **Close**, and then select **Close Window**.

Cancel a User Update Request

You can cancel an update request that has not started, that is, the status is not **In Process** or **Finished**.

To cancel a user update request:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **User Preference Templates**.
The Preference Template log opens.

3. From the toolbar, select **Update Users**, and then select **History**.
4. In the **Update Users: History** window, select an update that has not started.
5. From the toolbar, select **Cancel Request**.
6. When you are done, select **Close Window**.

Creating and Maintaining an Approved Email List for Project or Shell Mailboxes

Emails are important tools for communication, and they need to be included in the shell. Emails can come from:

- Shell members who send emails from outside the system.
- External Users who do not use the system.

The system collects emails and their attachments in a central repository, which is called a **Mailbox**. This repository lets users use emails to manage and document a project or shell.

Note

Emails can also be linked to business process records.

After an email resides in the shell Mailbox, a user can forward the email to appropriate members, flag the email for review, or reply to the email.

When the system is installed for your environment, a dedicated email domain for your company is specified. When you create a project or shell, the system assigns a unique identifier to the project or shell. To create a dedicated mailbox as the communication repository for the project or shell, the system combines your company email address (domain) and the project or shell identifier.

The system considers email addresses used by any company or partner user as "approved" and automatically allows the email addresses. To work with other External Users, such as vendors, you (the Administrator) must create a list of approved domains or email addresses, or both, that should be accepted by the project or shell Mailbox. This helps prevent spam and virus attacks from infiltrating your system, by way of external emails. You can add the approved domains and email addresses for all the users (Unifier users and External Users) by using the Approved Email List feature. By adding a domain, you do not have to enter individual email addresses. You can also use the Approved Email List feature to import names and email addresses from a CSV file.

Note

The system accepts up to 1,000 emails from any single address per day. The system ignores, as spam, any number of emails beyond 1,000.

To create an approved email list (email address of an individual):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Approved Email List**.

3. Select **New** to open the **Add address or domain** window.
4. In the **Email/Domain** field, enter the email address of the individual, for example: `someone@example.com`
5. (Optional) In the **First Name** and **Last Name** fields, enter the name of the user.
6. If you want to add another email address, select **Apply**.
7. Select **OK** to close the window.

To create an approved email list (Internet domain name):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Approved Email List**.
3. Select **New** to open the **Add address or domain** window.
4. In the **Email/Domain** field, enter the Internet domain name, for example: `@example.com`

 Note

- Domain names must start with the "at" (@) symbol.
- Names *can* include letters (abc), numbers (123), period (.), and dashes or hyphens (- - -).
- Names *cannot* include any other special characters or spaces.
- Names *cannot* begin or end with a dash or hyphen.
- If the system detects a domain name, the system disables the **First Name** and **Last Name** fields.

5. Select **Apply** and then select **OK**.

To edit an email address:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Approved Email List**.
3. In the log, select the email address that you want to edit, and double-click the email address to open it. The **Add/Edit Approved Emails** opens.
4. Edit the information, and select **OK**.

To delete an email address:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Approved Email List**.
3. In the log, select the email address you want to delete, and select **Delete**.

To find a specific email address:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Approved Email List**.
3. In the log, select **Find** to open the **Find** window.

The **Find** window shows fields from the list, which you can use to narrow the list of items you see on the list. These fields show an *operator*, such as "contains" or "equals," which you can use to specify more precisely which items you want to search for.

4. Select the operator beside the field, and choose the operator you want to use on the field, such as "equals," "does not contain," or "is empty".
5. Enter the value the field should contain.
You can enter a partial name or address.
6. Select **Search** (or press **Enter**).

The system will display the address(es) or name(s) that match the criteria you entered. It will also identify the criteria by which you have searched the list in the **Current View: filtered by** line above the list. You can cancel the find action by selecting **[Cancel Filter]**, and the system will restore the list to its unfiltered state.

Importing and Exporting Email Addresses

If the user and email address information is stored in another software application, such as Microsoft Excel, you can import the information from the software application into the Approved Email List. You can also export the information from the Approved Email List to another software application, if necessary.

The **Export** option, on the toolbar, lets you export:

- All
- Selected Rows
- Structure

Note

If you choose **Export** and then selected **All**, you do not need to create a template structure.

The **Import** option, on the toolbar, lets you open the File Upload window and select files.

To import and export *email addresses*, you first need to create a template structure to use for both the import and export actions.

To create a template structure:

1. On the **Approved Email List** log, select **Export**, and select **Structure**.
2. At the prompt, select **Open**.
The system opens a CSV file (for example: `unifier_approved_emails.csv`) showing the user information in the columns for:
 - Email / Domain*
 - First Name
 - Last Name
3. Save the CSV file.
This CSV file becomes the template for importing and exporting Approved Email List data.

In the CSV file, you can enter the email address information. If an email, or Internet domain name, is in use and you try to add it again, the system notifies you about the duplicate record.

Note

- Do not change column structure. Columns marked with an asterisk (*) contain required information.
- Upon importing, if the email, or Internet domain name, is not present in the Approved Email List log, the system creates a record.
- Upon importing, if the email is present in the Approved Email List log, the system updates the First and Last Name information for that associated record.
- Upon importing, if the Internet domain name is present in the Approved Email List log, the system ignores the First and Last Name information for that associated record.

Example

Email / Domain*	First Name	Last Name
user1@example.com	User1	Partner
user2@oracle.com	User2	Contractor

To import approved email addresses:

1. On the **Approved Email List** log, select **Import**. The **File Upload** window opens.
2. Use **Browse** to navigate to the CSV file you want to import.
3. Select **OK** to upload the file into the Approved Email List.

To export all approved email addresses:

1. On the **Approved Email List** log, select **Export**, and select **All**.
2. Select the CSV file, and select **OK** to begin export.
The system exports all the email addresses on the approved list to the CSV file and open the file.

You can edit the file and import it back into the system, or you can save the file for later updates.

To export specific approved email addresses:

1. On the **Approved Email List** log, select the email addresses that you want to export.
2. Select **Export**, and select **Selected Rows**.
The system exports all the email addresses that you selected to the CSV file and open the file.

You can edit the file and import it back into the system, or you can save the file for later updates.

Managing Permissions and Access Control

Permissions can be set at different levels in the system (the company, project, or shell level).

The permission settings can be done in these functional nodes:

- Access Control

- Company User
- User Administration, Groups sub-node
- Standards & Libraries, Permissions sub-node

A user can be granted permissions individually or can inherit them from the groups to which the user belongs.

If a user is in more than one group, the highest level of permissions granted in any group for a module will prevail.

Users can be granted individual permissions in addition to group permissions. If the user-level and group-level permissions are different for a module, the highest level will be granted to the user.

Note

If you grant permissions to shell-level (User mode) features from the company-level, the new permission settings will take effect on future projects and shells the user is assigned to, but not on current projects and shells. To grant permissions to a user for a current project, be sure to change the permissions from the shell-level user record.

Permissions in a shell template from which the project or shell is created override the company-level permissions.

Permissions Tab versus Access Control

You can use the following methods to control permissions and access to features and records:

- Access Control
- Permissions tab

Both of these will let you manage permissions. See below to help you decide which to use.

Access Control

Access Control displays the permissions granted to all users and groups per module. It lets you quickly see which users and groups have access to each module and at what permission setting.

You can add, remove, or adjust permissions for multiple users or groups at once, rather than editing the properties for each user or group individually. For example, if you must grant access permissions to a newly set up business process, or want to verify that all team members have access to a new feature, it may be easier to do this in Access Control rather than opening each individual group or user record.

You can also generate and print an Access Information table summarizing permission settings.

Permissions Tab

You can manage individual user or group permissions in the Permissions tab, which is part of the Properties window for the user or group record. Use the Permissions tab to view or adjust permission settings for a particular user or group.

The Permissions tab also enables access to permission templates. You can copy a permission template to set up the permissions for a new user or group; you can also save an existing user or group's permission settings as a new template for later use.

See [Editing User Permissions \(Permissions Tab\)](#) or [Edit Group Permissions \(Permissions Tab\)](#).

Edit User or Group Permissions Using Access Control

To adjust permission settings using Access Control:

1. Do one of the following:
 - To open company-level access control, go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **User Administration**, and then select **Access Control**. The Access Control window opens in the right pane of the Unifier window. The window displays a copy of the Navigator.
 - To open access control for a project or shell, go to the shell tab, and switch to **Admin** mode. In the left Navigator, select **Access Control**. The Access Control window opens in the right pane of the Unifier window. The window displays a copy of the Navigator.
2. Select a module in the Access Control window. The Module Permission Settings window opens. It lists the user(s) and group(s) that currently have access to the selected module and their permission settings.

You can **Add**, **Modify**, or **Remove** users or groups, and grant permission levels. See the following procedures.

To add user and group access to a module:

1. From the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
2. Select **Add Users/Groups**. The **User/Group Picker** opens.
3. Select users or groups from the list, select **Add** to add them to the Selected Users/Groups list, and select **OK**.
4. In the **Permission Settings** window, select the level of permissions you want to assign to the Users/Groups. Select **OK**.

To remove a user or group and their related module permissions:

In the **Module Permission Settings** window, select the checkbox next to the user or group, and then select **Remove**.

To modify permission settings:

In the **Module Permission Settings** window, select the checkbox next to the user or group, and then select **Modify**. Make changes to permission settings as needed, and select **OK**.

Create or Edit a Permission Template

Permission templates are sets of permissions that can be applied to users or groups of users as a whole. This is often an easier alternative to setting individual access permissions, especially when setting up groups and working with large teams. You can apply the template to a user or group to set basic permissions, and then modify the permissions for individuals or groups if needed.

Any shell-level permission granted at the company level and then applied to a specific user or group of users is inherited at shell creation time. The user permissions can then be modified at the shell level if further modifications are necessary.

By design, when you create a Permission-based UDR report at the template level:

- The data sources from company level BPs and the company level Document Manager will not be available in the Data Type pulldown (drop-down) field.
- The data sources from shell level BPs and the shell level Document Manage will be available in the Data Type pulldown (drop-down) field.

To create a permission template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Permission Templates**.
3. In the **Permission Templates** log, select **New**.
4. In the **Edit Permission Template** window, add a name and description of the template in the **General** tab.
5. Select the **Permissions** tab. This window is the same as the Permissions tab for an individual user or group record.
6. Configure the permissions settings, and select **OK**.

To edit a permission template:

1. Select the template from the **Permission Template** log, and select **Open**. The Edit Permission Template window opens.
2. To update the name or description, use the **General** tab.
3. Select the **Permissions** tab, and adjust permission settings as needed.
4. Select **OK**.

To create a permission template from existing permission settings:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Groups**.
3. Select a group, and select **Open**.
4. Select the **Permissions** tab.
5. Select **Save as Template**.
6. Enter a template name, and select **OK**.

Generate and Print an Access Information Report

You can generate and print an Access Information summary report of user and group permission settings. The report will display all user and group permissions.

To generate the report:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. From the toolbar, select **Access Information**.

The Access Information window opens. It may take several moments to generate the report.

To print the report:

1. Generate the **Access Information** report.
When the report is complete, **Print**  becomes available on the toolbar.
2. Select **Print**, and follow the prompts.

Running System Usage Reports

You can track current system usage using the predefined system usage reports. These reports provide an accurate and efficient way to track and manage licenses and system usage. Usage reports can be run based on company workspace or individual projects and shells, and can track both sponsor company users and partner company users.

The available reports are:

- Usage Detail By Company
- Usage Summary By Company
- Usage Detail By Project/Shell
- Usage Summary By Project/Shell
- Usage Detail By Company Workspace
- Usage Summary By Company Workspace
- Usage Detail By User
- Usage Summary By User
- User Account Details
- User Account Summary
- User Session Detail
- Last Login
- Current Login
- Proxy Login

The reports are described in the following sections.

Run a System Usage Report

The following is the general procedure for running a system usage report. The availability for the reports is based on permissions.

To run a system usage report:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **System Reports**.
3. Select a report from the log, and select **Open**.
The Query window for the report opens. The window differs depending on the report selected.

4. Use the table below to complete the Query fields.
You can leave the fields blank to return all records without filtering.
5. Choose a report format.
 - **HTML:** Displays the report in the standard format in a browser window. You may print a copy of the report from the browser window. (Select the File menu, and select Print or Print Preview.)
 - **CSV:** Formats the report in an exportable CSV format, usually in Microsoft Excel, or other software application you have set up for this format. You will be prompted to save the file or open it.
 - **Excel:** The report displays in Microsoft Excel format in the browser window. You can save an Excel formatted copy of the report or print from the window. (Select the File menu, and select Save As or Print.)
 - **PDF:** Opens Adobe Acrobat Reader and displays the report in PDF format. You can save a copy of the report or print it from the PDF window. (Select the File menu, and select Save or Print.)
 - **XML:** Generates the output in XML format. Before the results are generated, a Confirmation message appears, giving you the option to save the XML file to your local machine (select **Save**) or display the results in a popup browser window (select **Open**).
6. Select **Run** to run the report. The report results are generated in the format you chose.

For this query parameter:	Do this:
Owner Company	The field displays the owner company.
Source	Select one of the following options to see where users' time was spent: • All: All areas of the system • Company Workspace • Project/Shell: If you select Project/Shell, the Select button is activated, which lets you pick the project or shell. • Other: Other areas of the system that are not part of a project or shell or the company workspace, such as Admin mode, user home page, and so on.
Project/Shell	If you chose Project/Shell or All as the source, the Project/Shell picker is activated. Click Select to select a specific project. If you do not select a project or shell, the default is all projects and shells.
Partner Company	Click Select to select a specific partner, or leave blank to include all partner companies (in addition to the owner company results).
Date Range From	Select the Date/Time icon to enter a start date for the report. If you leave it blank, the report will start at the company activation date.
Date Range To	Select the Date/Time icon to enter a start date for the report. If you leave it blank, the report will include results up to the current date.

System Usage Report Types

The following describes details for running the predefined system usage reports.

Usage Detail By Company

This report lets you view usage times across a company and all its partner users grouped by Company /Partner name. This report uses the login time to track usage and shows usage per day (not per session).

The report results are sorted as follows:

- Company name in alphabetical order
- For each company, the list of user names: first name, last name
- For each user, lists the source alphabetically
- When source = Project, project names are listed alphabetically

Report Query Parameters:

- Owner Company: Read-only
- Source: All, Company Workspace, Project/Shell, or Other
- Project/Shell: Select a project or shell or leave blank
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
Company Name	The name of the company for which the report is being generated. Depending on filter condition, this report can be generated for a particular company or all.
User Name	The user names that are involved either in projects and shells or directly at Company level.
User ID	The user IDs that are involved either in projects and shells or directly at Company level.
Source	Company Workspace, Project, Shell, or Other
Name	The names of projects and shells that have users assigned to it either from Company or Partner levels. If user does not participate in any projects or shells the Project or Shell Name and number columns are empty.
Number	The number that corresponds to the project or shell Name
Date	Date when user signed in
Usage (Min)	Time taken by User in minutes between sign in and sign out
Usage (Hrs)	Time taken by User in hours between sign in and sign out
Total	Total time taken by all users per company login level and per Company Partner level
Grand Total	Total time taken by all users at a company level as well as Company Partner level

Usage Summary By Company

This report lets you view summarized usage times across the sponsor company and partner companies. These are usage times logged by users, after they sign in, independent of whether

they are working for their own company or other companies. The report results are sorted alphabetically by company name.

Report Query Parameters:

- Source: All, Company Workspace, Project/Shell, or Other
- Project: Select a project or leave blank for all
- Shell: Select a shell or leave blank for all
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
Company Name	The company name. Depending on filter condition, this report can be generated for a particular company or all companies.
Usage (Min)	Total Time taken by all Company Users in minutes at "Source" level between sign in and sign out in the specified date ranges
Usage (Hrs)	Total Time taken by all Company Users in hours at "Source" level between sign in and sign out in the specified date ranges

Usage Detail By Project/Shell

The Usage Detail By Project/Shell report shows usage details per projects and shells across a company and its partners grouped by project or shell name. Results are sorted by:

- Project and shell names alphabetically for all projects belonging to user company
- For each project or shell, lists users belonging to owner company first followed by partner company sorted alphabetically
- Within a company, users are sorted alphabetically by first name, last name

Report Query Parameters:

- Source: defaults to Project/Shell
- Project/Shell: Select a project or shell or leave blank
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
Name	The names of projects and shells that have users assigned to it either from Company or Partner levels.
Number	The corresponding Project and Shell Numbers.
Company Name	Name of the owner company. Depending on filter condition, this report can be generated for a particular Sponsoring company. If no users from current company are assigned to the Project, the row will start with Partner name.

This column:	Shows:
User Name	The user names that are involved in projects or shells
User ID	The user ids that are involved either in projects or shells
Date	Date when user signed in
Usage (Min)	Time taken by User in minutes between sign in and sign out working on that project or shell
Usage (Hrs)	Time taken by User in hours between sign in and sign out working on that project or shell
Total	Total time taken by sponsor company or partner company users for a given project or shell
Grand Total	Total time taken by sponsor company or partner company users across projects or shells.

Usage Summary By Project/Shell

This report displays summarized usage times per project and shell across a company and partner users grouped by project name.

Report Query Parameters:

- Source: defaults to Project/Shell
- Project/Shell: Select a project or shell or leave blank for all
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
Name	The names of projects or shells that have users assigned to it either from Company or Partner levels
Number	The corresponding Project and Shell Numbers
Company Name	Either the Sponsoring Company Name or Partner Company Name. Distribution across Owner Company and Partner users in a given Project
Usage (Min)	Total Time taken by all Users in minutes between sign in and sign out per project or shell
Usage (Hrs)	Total Time taken by all Users in hours between sign in and sign out per project and shell
Total	Total time taken by users at a company level as well as Company Partner level for across all company projects or shells

Usage Detail By Company Workspace

This report displays usage times for company and partner users working in the owner company's Company Workspace.

Report Query Parameters:

- Source: defaults to Company Workspace
- Project/Shell: Not applicable
- Partner Company: Select a partner or leave blank for all

- Date Range From
- Date Range To

This column:	Shows:
Company Name	The company name. Depending on filter condition this report can be generated for a particular Sponsoring company. If no users from current company are assigned to work in the Company Workspace the row will start with Partner name.
User Name	The user names that are involved at Company Level
User ID	The user ids that are involved at Company Level
Date	Date when user signed in
Usage (Min)	Time taken by User in minutes between sign in and sign out working at the Company Workspace
Usage (Hrs)	Time taken by User in hours between sign in and sign out working at the Company Workspace
Total	Total time taken by users at a company level as well as Company Partner level at Company level
Grand Total	Total time taken by users at a company level as well as Company Partner level across Company and its Partners.

Usage Summary By Company Workspace

This report summarizes usage times for company and partner users working in the owner company's Company Workspace.

Report Query Parameters:

- Source: defaults to Company Workspace
- Project/Shell: Not applicable
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
Company	Name of the Sponsoring Company or Partner
Usage (Min)	Total Time taken by all Users in minutes between sign in and sign out in Company Workspace per Company/ Partner
Usage (Hrs)	Total Time taken by all Users in hours between sign in and sign out in Company Workspace per Company/ Partner
Total	Total time taken by users at the owner company level as well as Company Partner level in the Owner Company Workspace

Usage Detail By User

This report details usage across a company and all its partner users grouped by user name. The results sort by user's first name and last name independent of whether user belongs to the owner company or a partner company.

Report Query Parameters:

- Source: All, Company Workspace, Project/Shell, or Other
- Project/Shell: Select a project or shell or leave blank
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
User Name	The user names that are involved either in Projects or directly at Company Level
User ID	The user ids that are involved either in Projects or directly at Company Level
Company Name	Company Name of the User
Source	Either Company Workspace/Project/ Other
Name	The names of projects and shells that have users assigned to it either from Company or Partner levels. This column is empty if Source is Company Workspace or Other.
Number	The corresponding Project or Shell Numbers. This column is empty if Source is Company Workspace or Other
Date	Date when user signed in
Usage (Min)	Time taken by User in minutes between sign in and sign out
Usage (Hrs)	Time taken by User in hours between sign in and sign out
Total	Total time taken by a particular user at a company level as well as Company Partner level across Source criteria
Grand Total	Total time taken by all users at a co. level as well as Company Partner level across Source criteria

Usage Summary By User

This report displays summarized usage times per user. The report is sorted alphabetically by user first name, last name.

Report Query Parameters:

- Source: All, Company Workspace, Project/Shell, or Other
- Project/Shell: Select a project or shell or leave blank for all
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To

This column:	Shows:
User Name	All user names for sponsor company and partner companies
User ID	The corresponding User IDs
Company Name	Each user's company

This column:	Shows:
Usage (Min)	Total Time taken by a user in minutes between sign in and sign out summed up in the date ranges
Usage (Hrs)	Total Time taken by a User in hours between sign in and sign out summed up in the date ranges

User Account Details

This report displays account status details across a company and partners grouped first by Company User Names and then Partner User Names.

Report Query Parameters:

- Source: All, Company Workspace, or Projects/Shells
- Source Name: Active if Projects/Shells is the source. Click Select and select the project or shell name from the list.
- Partner Company: Select a partner or leave blank for all

This column:	Shows:
Company Name	The Sponsor Company Name, followed by the Partner Names
User Name	All user Names from a company and partner users assigned to Sponsoring Company Projects
User ID	The corresponding User IDs
Source	The Project or Shell Name the user is a part of
Source Name	The name of the project or shell
Date Added	The date that this user was added to the company. This column is empty for Partner users
User Status	The Status of the User at the project or shell level whether (Active/Inactive)
Status Effective Date	The date the Status of the user changed at the project level.

User Account Summary

This report summarizes account status details across a company and partners grouped first by Company User Names and then Partner User Names.

Report Query Parameters:

Partner Company: Select a partner or leave blank for all

This column:	Shows:
Company Name	The Sponsoring Company or Partner
Company Short Name	The short name for the Company
Total Users	Total number of users at Owner Company/Partner working on Owner Company Workspace or Owner Company Projects
Current Active Users	Total number of active users at Owner Company/Partner working on Owner Company Workspace or Owner Company Projects

This column:	Shows:
Current Inactive Users	Total number of inactive users at Owner Company/ Partner working on Owner Company Workspace or Owner Company Projects
Current On Hold Users	Total number of inactive users at Owner Company/ Partner working on Owner Company Workspace or Owner Company Projects

User Session Detail

This report displays user sign-in session details.

Report Query Parameters:

- Owner Company
- Partner Company: Select a partner or leave blank for all
- Date Range From
- Date Range To
- Platform
 - Website
 - Mobile App
 - Website & Mobile App

This column:	Shows:
User Name	All user Names from an Owner Company
User ID	The corresponding User IDs
Company Name	The Sponsoring Company or Partner
Login Date	Date user signed in
Logout Date	Date user signed out. (Dates will displayed in Server Time zone)
Session End Type	Timeout or Logout
Usage (Min)	Usage between sign in and sign out in minutes
Usage (Hrs)	Usage between sign in and sign out in Hours
Total	Total time taken

The following shows the columns according to the platform:

This column:	Shows:
Website	As is.

This column:	Shows:
Mobile App	Output for User Session Detail Report: The header of the Report will have the fields of Owner Company, Partner Company, Report Run by, and the date that the report was run on. Columns displayed in the report output: • User Name • User ID • User Type • Company Name • Operating System • Device • Login Date • Logout Date • Session End Type • Usage (Min) • Usage (Hrs)
Website & Mobile App	Output for User Session Detail Report: The header of the Report will have the fields of Owner Company, Partner Company, Report Run by, and the date that the report was run on. Columns displayed in the report output: • User Name • User ID • User Type • Company Name • Operating System • Device • Login Date • Logout Date • Session End Type • Usage (Min) • Usage (Hrs)

About Platform

Unifier can be accessed through various platforms (website, mobile app, or both), and you have the option to track the users when they sign in through these platforms. This ensures that you can capture information such as number of sign-ins, device type, and so forth.

When you select the platform, the report output, will have the following columns:

This column:	Shows:
Operating System	The version of the device operating system.
Device	The device model. For example, Apple iPhone 7 plus.

The following shows the columns according to the platform:

This column:	Shows:
Website	As is.

This column:	Shows:
Mobile App	Output for Last Login Report: The header of the Report will have the fields of Owner Company, Partner Company, Report Run by, and the date that the report was run on. Columns displayed in the report output: • User Name • User ID • User Type • Company Name • User Status • Operating System • Device • Last Login Date • Days Since Last Login
Website & Mobile App	Output for Last Login Report: The header of the Report will have the fields of Owner Company, Partner Company, Report Run by, and the date that the report was run on. Columns displayed in the report output: • User Name • User ID • User Type • Company Name • User Status • Operating System • Device • Last Login Date • Days Since Last Login

The information above applies to the following reports (which are available by going to the **Company Workspace** tab, switching to **Admin** mode, and selecting **System Reports** in the left Navigator):

- User Session Detail
- Last Login
- Current Login

The available report formats are:

- HTML
- CSV
- Excel
- PDF
- XML

Last Login

This report displays last sign-in details for a user. It lists the users that have signed in, not all user accounts. If a user has never signed in, that user will not be listed on the Last Login Report.

Report Query Parameters:

- Partner Company: Select a partner or leave blank for all
- Platform: Select a platform to monitor.

This column:	Shows:
User Name	All user Names from an Owner Company
User ID	The corresponding User IDs
Company Name	The Sponsoring Company or Partner
User Status	The status of the user
Last Login Date	Date when Company User last signed in. For a partner user, this date should be the last date the user signed in to Partner Company Workspace.
Days Since Last Login	Number of days since the user last signed in. Calculated as difference between last sign in date and the date on which the report is run.

Current Login

The Current Login Report displays currently logged in users.

Report Query Parameters:

- Source: All, Company Workspace, or Projects
- Source Name: Active if Projects is the source. Click Select and select the Project name from the list.
- Partner Company: Select a partner or leave blank for all.
- Platform: Select a platform to monitor.

This column:	Shows:
Company	Sponsor company
User Name	All user names from an Owner Company
User ID	The corresponding User IDs
Source	The source
Source Name	The source name
Source Number	Corresponding number
Login Time	Login time for the current session
Remote Address	The IP address of the computer from which the user is logged on

The following shows the columns according to the platform:

This column:	Shows:
Website	As is.

This column:	Shows:
Mobile App	Output for Current Login Report: The header of the Report will have the fields of Owner Company, Partner Company, Source, Source Name, Report Run by, and the date that the report was run on. Columns displayed in the report output: • Company Name • User Name • User ID • User Type • Operating System • Device • Source • Source Number • Login Time • Remote Address
Website & Mobile App	Output for Current Login Report: The header of the Report will have the fields of Owner Company, Partner Company, Source, Source Name, Report Run by, and the date that the report was run on. Columns displayed in the report output: • Company Name • User Name • User ID • User Type • Platform • Operating System • Device • Source • Source Number • Login Time • Remote Address

Proxy Login

This report displays user sign-in proxy details.

Report Query Parameters:

- Partner Company: Select a partner or leave blank for all partners
- Date Range From

This column:	Shows:
First Name	The Proxy first name
Last Name	The Proxy last name
Login User Name	The user who logged in
Company Short Name	The Company name of the Proxy user
Proxy User Name	Then name of the Proxy
Login Date	The date the user logged in

Setting Permissions for Inbox

To set **Inbox** permissions for Company Workspace and project or shell instances:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, expand **Mailbox**, and then expand **Project Mailbox**.
4. Select **Inbox** to open the **Permissions Setting for: Inbox** window.
5. Select **Add** or **Modify** and grant the following permissions:
 - Delete: To delete messages.
 - Reply: To reply to messages.
 - View: To view messages.
 - Create/Manage Folders: To create, rename, and move folders under **Inbox**.
6. Select **Apply** when finished.

Note

You cannot grant permissions at **Project Mailbox** level. All **Project Mailbox** permissions must be granted at **Inbox** level.

For Permission Templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **Standards & Libraries**.
4. Select **Permission Templates** to open the **Permission Settings for: Permission Templates** window.
5. Select **New**.
6. Select **Permissions**.
7. Go to **User Mode Access**, and expand it.
8. Select **Mailbox** to expand it.
9. Select **Project Mailbox** to expand it.

Setting Permissions for Unpublished Attachments

Whenever a mail is received through the Project Mailbox, the attachment associated with the email will be captured within the Document Manager (DM). A new folder will be available under Project Mailbox node in which all unpublished mail attachments will be available for publishing to the project or shell DM.

To set **Unpublished Attachments** permissions for project or shell instances:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Mailbox**, and then expand **Project Mailbox**.
4. Select **Unpublished Attachments** to open the **Permission Settings for: Unpublished Attachments** window.
5. Select **Add** or **Modify**, and grant the following permissions:
 - Publish: To allow publishing into the DM.
 - Download
 - Open
 - View
6. Select **Apply** when finished.

Task Reassignment (Company and Project)

The **Task Reassignment** node provides administration access to two sub-nodes:

- **Active User Tasks**
- **Inactive User Tasks**

Each sub-node provides a list of active tasks, one for users who are marked Active in the system and one for users who are marked Inactive. Only BP records that have *active* tasks are displayed on the **Task Reassignment - Active User Tasks** and **Task Reassignment - Inactive User Tasks** logs. The system does not list records that have reached a Terminal Status—such as Rejected, Canceled, or Approved—whether the user is Active or Inactive. Additionally, reassignment of a task does not change the assignment of tasks that have been completed.

When a user with assigned tasks is removed from a project or inactivated, you (Company Administrator, Project Administrator, or Administrator user) can move the active tasks from the inactive user to an active user.

In the case of a dynamic assignment (when a workflow is routed back to the previous step, and the task on that step was assigned to the removed user), the system lets you send the task to the new active user. (For any active tasks that are reassigned to a different active user, the original assignee only receives tasks according to the configured Step Revisiting policy if the original assignee is still active.) If the previous step was a **match step <Creation>** step, the system automatically notifies the administrator or groups (or both) listed in the **Send error notification to** field; if no one is listed in that field or the specified users are all inactive, the system notifies the company, project, or shell administrator. This also applies if a record must be sent back for review.

The following topics describe the sub-nodes and provide more information about task reassignment.

Active User Tasks

The **Task Reassignment - Active User Tasks** log lists records that are in progress (the tasks are considered "active" because the workflow has not completed yet) for active users.

Active users include:

- **Company level:** This includes users from both owner and all partner companies.
- **Project level:** This includes users from both owner and the member companies.

Note

A Member Company is a Partner Company. When a Partner Company is added to a shell, the Partner Company becomes a Member Company.

Active tasks are where the active user is an assignee and the record has not reached the terminal step. This means that the previous user no longer sees the task in the log but because of a previous action taken by the previous user, the task still appears in the log. The reasons for this appearing in the log are as follows:

- To account for Dynamic step assignment. For example, the workflow setup might have **match step <any step>** in a subsequent step.
- To account for step revisits.

Task Reassignment - Active User Tasks (toolbar options)

Option	Description
Reassign	To open the Select New Assignee window and search for an Active user by using the person's name or company. You can select one or more tasks and select Reassign .
View	This option lets you view the following pre-defined views: • All Tasks • Group by Assignee • Group by Origin • Group by Business Process • Reassignment History (For more information, see the Reassignment History description in Views.) • Create New View • Manage Views You can use the Create New View option to define user-specific views.
Refresh 	To refresh the items listed in the log.
Print 	To print or export the items listed in the log, based on the current view of the log.

Option	Description
Edit View 	To view and edit the settings of items listed in the log. Use the View Name field to enter a name for your new view. Use the Columns tab to: - Determine which columns to display: Available Columns - Select the columns: Selected Columns - Lock the columns in place: Lock after selected Column Use the Filters tab to: - Determine the field for your filter: Field - Indicate the operator for your filter: Operator - Include any values: Value - Determine the number of records that you want to be displayed: Number of Records Use the Group By tab to: - Group the list based on the options available from the drop-down list. - Adjust the order of your list: Order Use the Sort By tab to sort items according to: - Previous assignee - New assignee - Origin - Business Process - Record Number - Reassigned on Select Cancel to discard your changes and return to the log. Select Apply to apply your changes to the view. Select Save As to save an existing view with another name.
Search  / Find on Page 	To filter the log for specific results.

Task Reassignment - Active User Tasks (columns)

Column Heading	Description
Assignee	Name of the inactive user assignee.
Company	Company name of the inactive user.
Origin	The source. The source can be project, shell, or company tab name.
Business Process	Name of the business process.
Record Number	The record number
Title	The title.
Record Due	The due date for the record.
Creation Date	The creation date for the task.
Workflow Name	The workflow name.

Inactive User Tasks

The **Task Reassignment - Inactive User Tasks** log lists records that are in progress (the tasks are considered "active" because the workflow has not completed yet) for inactive users.

Inactive users include:

- **Company level:** This includes users from both owner and all partner companies.
- **Project level:** This includes users from both owner and the member companies.

Active tasks are where the inactive user is an assignee and the record has not reached the terminal step. This means that the previous user no longer sees the task in the log but because of a previous action taken by the previous user, the task still appears in the log. The reasons for this appearing in the log are as follows:

- To account for Dynamic step assignment. For example, the workflow setup might have **match step <any step>** in a subsequent step.
- To account for step revisits.

The Task Reassignment log has the following columns:

Note

The following information applies to the company level and shell level unless it is noted otherwise.

Task Reassignment - Inactive User Tasks (toolbar options)

Option	Description
Reassign	To open the Select New Assignee window and search for an Active user by using the person's name or company. You can select one or more tasks and select Reassign .
View	This option lets you view the following pre-defined views: • All Tasks • Group by Assignee • Group by Origin • Group by Business Process • Reassignment History • Create New View • Manage Views You can use the Create New View option to define user-specific views.
Refresh 	To refresh the items listed in the log.
Print 	To print or export the items listed in the log, based on the current view of the log.

Option	Description
Edit View 	To view and edit the settings of items listed in the log. Use the View Name field to enter a name for your new view. Use the Columns tab to: - Determine which columns to display: Available Columns - Select the columns: Selected Columns - Lock the columns in place: Lock after selected Column Use the Filters tab to: - Determine the field for your filter: Field - Indicate the operator for your filter: Operator - Include any values: Value - Determine the number of records that you want to be displayed: Number of Records Use the Group By tab to: - Group the list based on the options available from the drop-down list. - Adjust the order of your list: Order Use the Sort By tab to sort items according to: - Previous assignee - New assignee - Origin - Business Process - Record Number - Reassigned on Select Cancel to discard your changes and return to the log. Select Apply to apply your changes to the view. Select Save As to save an existing view with another name.
Search  / Find on Page 	To filter the log for specific results.

Task Reassignment - Inactive User Tasks (columns)

Column Heading	Description
Assignee	Name of the inactive user assignee.
Company	Company name of the inactive user.
Origin	The source. The source can be project, shell, or company tab name.
Business Process	Name of the business process.
Record Number	The record number
Title	The title.
Record Due	The due date for the record.
Creation Date	The creation date for the task.
Workflow Name	The workflow name.

Reassigning Tasks (Workflow)

To reassign an active task from a removed user to an active user:

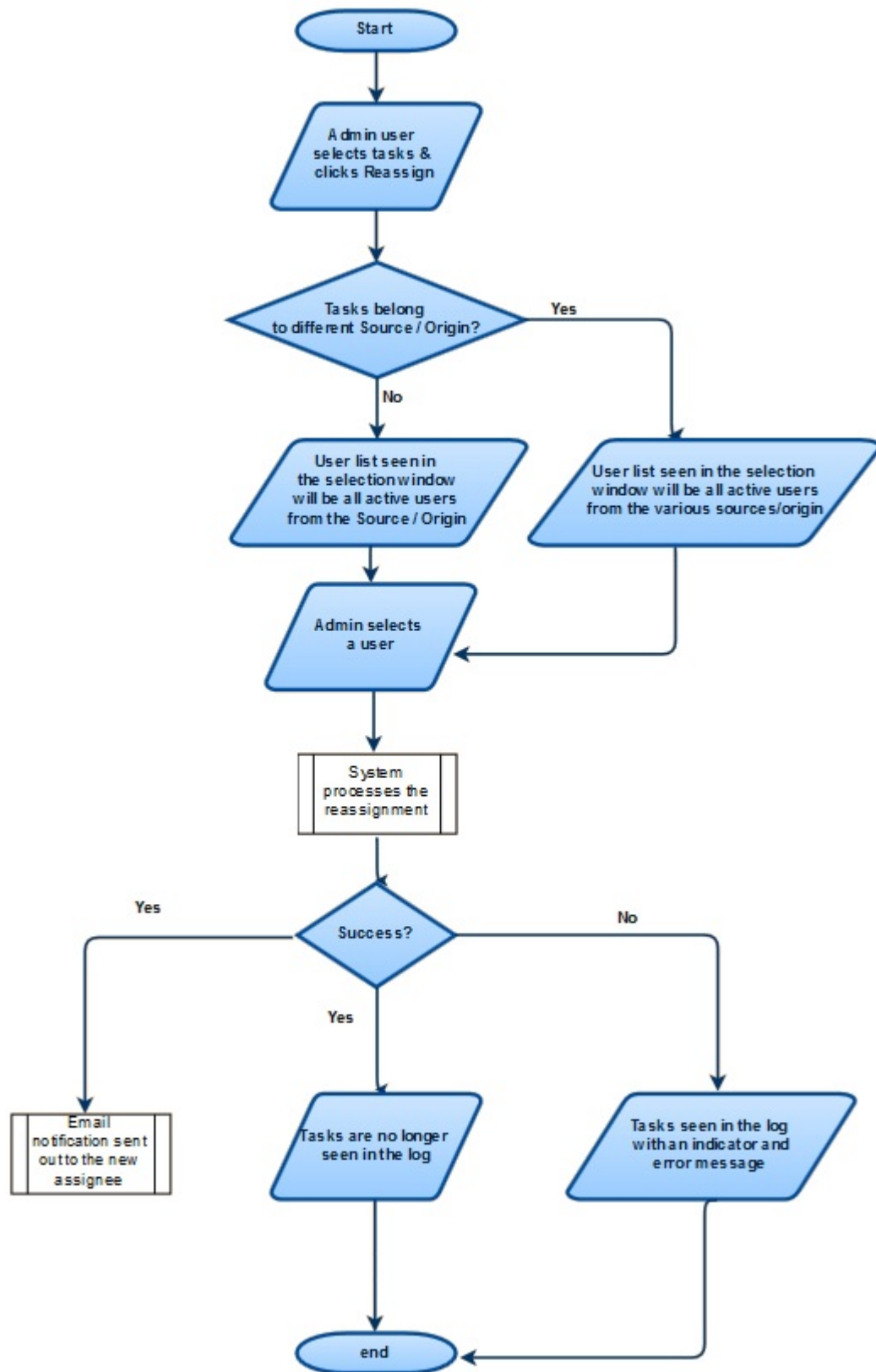
1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, select **Task Reassignment**, and then select **Inactive User Tasks**.
3. In the **Task Reassignment - Inactive User Tasks** log, select the applicable task, and select **Reassign**.
4. In the **Select New Assignee** dialog box, locate the applicable user, and click **Select**.
5. When the confirmation message appears, select **OK**.

To reassign an active task from an active user to another active user:

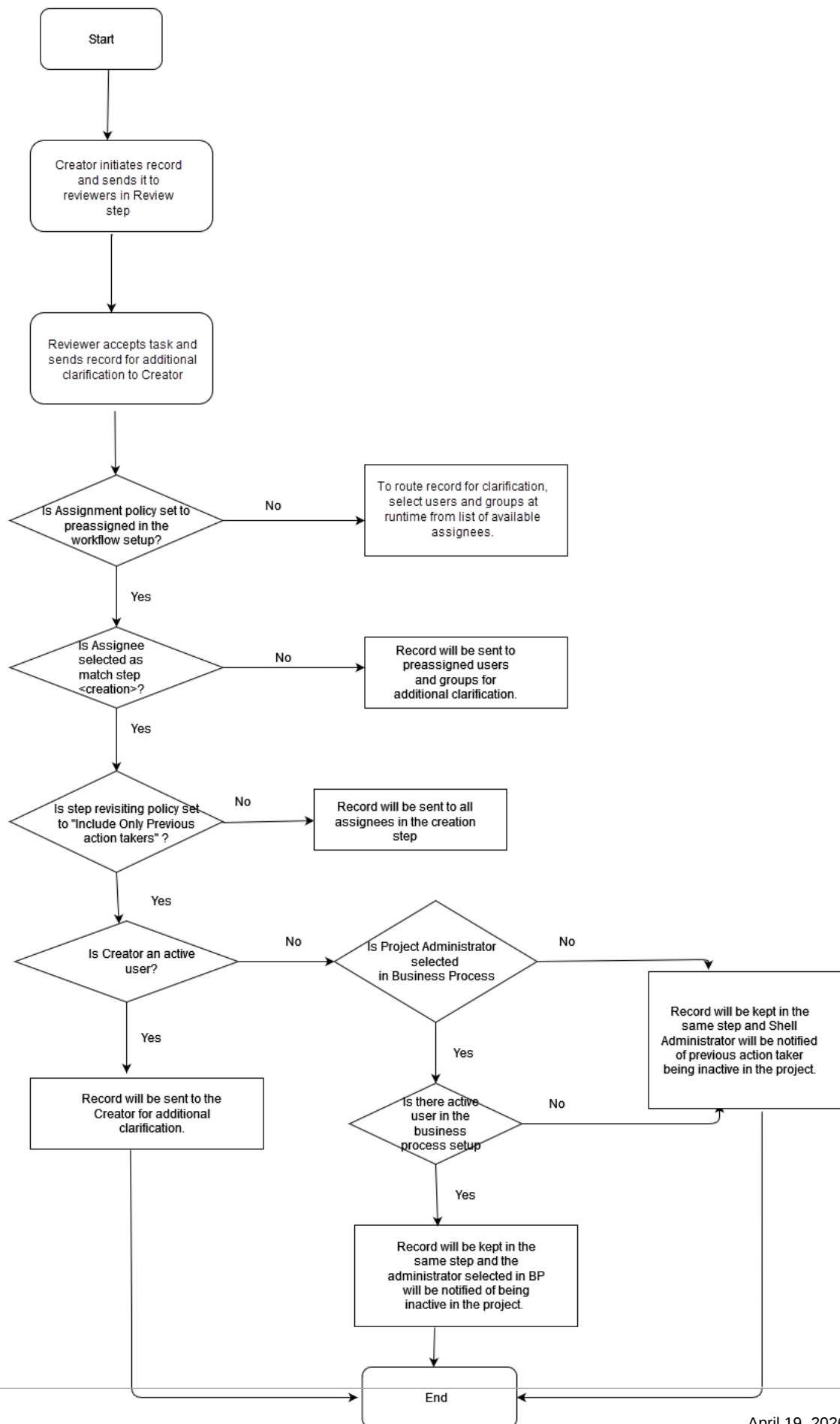
1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, select **Task Reassignment**, and then select **Active User Tasks**.
3. In the **Task Reassignment - Active User Tasks** log, select the applicable task, and select **Reassign**.
4. In the **Select New Assignee** dialog box, locate the applicable user, and click **Select**.
5. When the confirmation message appears, select **OK**.

The following charts describe the workflow for reassigning tasks. The first chart outlines the high-level process as it pertains to source/origin. The second chart outlines the runtime behavior. The subsequent topics explain each step in detail.

Source/Origin Overview



Runtime Behavior



Workflow of Reassigning Tasks (Company)

- The administrator user selects tasks.
Tasks may or may not be from the same Origin. For example, the Tasks may belong to two different projects P1 and P2.
- The administrator user selects **Reassign**.
- The user picker window opens that displays the list of users as follows:
 - All active owner company users from P1 and P2.
 - All active member company users from P1 and P2.
 - Users belonging to either of the two projects.
- The administrator user selects a new assignee.
- The system assigns all selected tasks to the new assignee.
- If user exists in the project, the task will get reassigned and an email notification will be sent to the new assignee. See [New Assignee Email Notifications](#).
- If user does not exist in the project, the task will not get reassigned and will continue to remain in the log.

Workflow of Reassigning Tasks (Project)

- The administrator user selects tasks.
Tasks belong to the same project.
- The administrator user selects **Reassign**.
- The user picker window opens that displays the list of users as follows:
 - All active owner company users.
 - All active member company users.
- The administrator user selects a new assignee.
- The system assigns all selected tasks to the new assignee.
- If reassignment is successful, the task will get reassigned and an email notification will be sent to the new assignee. See [New Assignee Email Notifications](#).
- If reassignment is not successful, the task will not get reassigned and will continue to remain in the log.

Reassigning Tasks (Scenarios)

In the following examples, the Company Administrator is the user who has permissions to reassign the tasks.

Case 1: Selected new assignee is a CC user

1. Business Process record R1 is assigned to user A and has CC'd user B.
2. User A has been inactivated.
3. Company Administrator has now reassigned this task to user B.

4. User B receives the task reassignment notification in addition to seeing the task in the Tasks log.
5. The system removes the notification for this task, which the user B had received because of being a CC'd user, from the Notifications log.

Case 2: Selected new assignee is not in the Workflow (WF) setup

If the selected assignee is not in the WF setup, the user will still get the reassigned task. This means that the task will be seen in the Tasks log.

Note

Reassigning the task does not add the user to the WF setup. This action has to be performed by the administrator who is setting up the workflow setup. Similarly, the user will not have navigation level permissions to the Business Process log that the task belongs to. This action again has to be performed by the administrator.

Case 3: Selected new assignee had previously declined the task

If the selected new assignee had previously declined the task, then post reassignment, the task will be seen in the Tasks log.

Assumption: The workflow setup allows declining of the task.

Case 4: Step Revisiting option is set to Include only previous action takers

1. Business Process record R1 that was created by user A is assigned to users B and C.
2. User A has been inactivated.
3. User B accepts the task and routes the record to step A.
Because Assignees is set to Dynamic with **match step <Creation>** at step A, the system automatically notifies the Company Administrator and asks the administrator to transfer ownership of the record.
4. Company Administrator changes the ownership to user D.
5. User D receives the task notification, accepts the task, and routes the record to step C.
6. At step B, Assignees is set to Dynamic with **match step <any step>** and assignee who took action on that match is inactivated.
7. User C accepts the task and routes the record to step B.
Because Assignees is set to Dynamic with **match step <any step>** at step B and the assignee who acted on that match step is Inactive, the system displays a message that lets user B select another user based on the filter conditions defined for the workflow setup.
8. User B selects user E for step B.
9. User E receives the task notification.

Case 5: Single Completion policy - Non-participating assignee has been inactivated

A non-participating assignee is one who has not acted on a task. When such a user is inactivated, the in-flight records that had this user in one of the steps will not be seen in the Tasks reassignment log.

Case 6: Completion Policy - All-Consensus

1. Business Process record R1 is assigned to users A, B, and C.

2. User A accepts the Task and routes the record to step A.
3. User B declines the task.
4. User C has been inactivated.
5. Company Administrator reassigns the Task of user C from the **Task Reassignment - Inactive User Tasks** log to user D.
6. User D accepts the Task and routes the record to step B.
7. The system routes the record to the resolving action because the users have taken different actions.

Case 7: Completion Policy - All-Majority

1. Business Process record R1 is assigned to users A, B, and C.
2. User A accepts the Task and routes the record to step A.
3. User B accepts the Task and routes the record to step B.
4. User C has been inactivated.
5. Company Administrator reassigns the Task of user C to user D.
6. User D accepts the task and routes the record to step B.
7. The system routes the record to step B because the majority of the users took the action of routing it to step B.

Views

You can use the views to sort or group tasks based on various attributes. You can also use the **Create New View** and **Manage Views** options to define additional views and hide or show views.

The following displays the views and their definitions:

View	Definition
All Tasks	Columns are in the following order. • Assignee • Company • Origin • Business Process • Record Number • Title • Record Due • Creation Date • Workflow Name Other definitions are the same as in the Tasks log.

View	Definition
Group by Assignee	The Group By element will be Assignee. Columns are in the following order. • Assignee • Company • Origin • Business Process • Record Number • Title • Record Due • Creation Date • Workflow Name Other view attributes are the same as in the All Tasks view.
Group by Origin	The Group By element will be Origin. Columns are in the following order. • Assignee • Company • Origin • Business Process • Record Number • Title • Record Due • Creation Date • Workflow Name Other view attributes are the same as in the Group by Origin in the Tasks log.
Group by Business Process	The Group By element will be Business Process. Columns are in the following order. • Assignee • Company • Origin • Business Process • Record Number • Title • Record Due • Creation Date • Workflow Name Other view attributes are the same as in the Group by Business Process in the Tasks log.
Reassignment History - log	It is important to maintain the reassignment history of tasks. The view Reassignment History will enable administrators to view all the past reassignments. When this view is active: Toolbar option of Reassign will not be seen. All other toolbar options will remain as is. Log columns will be Origin, New Assignee, Business Process, Previous assignee, Reassigned On, and Record Number. The date column of Reassigned on will retain user preferences.

View	Definition
Reassignment History - View settings	Columns • Origin • New assignee • Business Process • Previous assignee • Reassigned on • Record Number Filters • Previous assignee • New assignee • Origin • Business Process • Record Number • Reassigned on The operators available will be dependent on the data type. In addition to the filter fields, the view definition will also have Number of Records. Group By String fields Sort By String fields View buttons Note The view settings will only have Cancel and Apply. There can be only one view of this type and this is already provided by the system. While you can use the settings to change the displayed information temporarily, you cannot save your changes.

Reassigning Tasks Access Control

Access to the **Tasks Reassignment** node is by permissions.

To grant permission:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **User Administration**, and then expand **Tasks Reassignments**.
4. Select **Active User Tasks**, and use the **Module Permission Settings** dialog box to select users, or groups, and set permissions.

5. Select **Inactive User Tasks**, and use the **Module Permission Settings** dialog box to select users, or groups, and set permissions.

The "Enable" permission enables the user to:

- View the task
- Reassign the task

You can assign the permissions to either an individual user or a group.

The permission changes are applicable to all modules, where the permissions can be set, for example:

- User and then select Permissions
- Group and then select Permissions
- Permission template

New Assignee Email Notifications

The Subject line of the new assignee email notification states how many tasks have been assigned and by whom.

The body of the new assignee email notification contains the following information:

- Project name
- Record number of the business process
- Title of the business process
- Unifier login link

Downloading Configuration Packages for a Development Environment (Cloud Only)

Cloud-based administrators for an Owner Company can access Oracle-supplied configuration packages by selecting the Configuration Packages icon in the upper-right corner of the landing page. You must be in Admin mode to view and access this option.

The following packages are currently available for use with Unifier:

- **Unifier Accelerator Configuration Package**—featuring over 65 business processes (BPs) and more than 350 reports and dashboards—accelerates your implementation while providing the flexibility to address your organization's and project's specific requirements. For more information, see the *Unifier Accelerator User Guide*.
- **Unifier Accelerator including Facilities Management Configuration Package**—which includes everything in the Accelerator package and also supports real estate portfolio management, facilities management, maintenance management, as well as sustainability and utilities management. For more information, see the *Unifier Accelerator User Guide* and the *Unifier Facilities and Asset Management User Guide*.
- **Healthcare Add-On Package**—featuring preconfigured processes for Infection Control Risk Assessment (ICRA) and Interim Life Safety Measures (ILSM). For more information, see [Improve patient and worker safety during healthcare construction and renovation](#).

Prerequisites

Ensure that you have administrative access to Company Settings.

Procedure

To download a package:

1. Switch to **Admin** mode.
2. In the upper-right corner of the landing page, select **Configuration Packages** .
3. To download a package, select the applicable link.
4. To prepare for installation, following the instructions provided on the **Configuration Packages** window.
5. When you are ready to install the selected package, follow the guidelines and steps in Importing Configuration Packages.

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Queries

You will be using queries to extract data from the database for reports and data pickers and to set up auto-creation with creator elements.

A query is a data mining tool—a method for retrieving information from a database. A query filters the information returned from the database according to restrictions or conditions you specify. Unifier queries can:

- Filter or narrow the data being retrieved for use in reports and manager sheets.
- Set up conditions or triggers to make something happen automatically.
- Filter or narrow the data being retrieved for use in a data picker element.

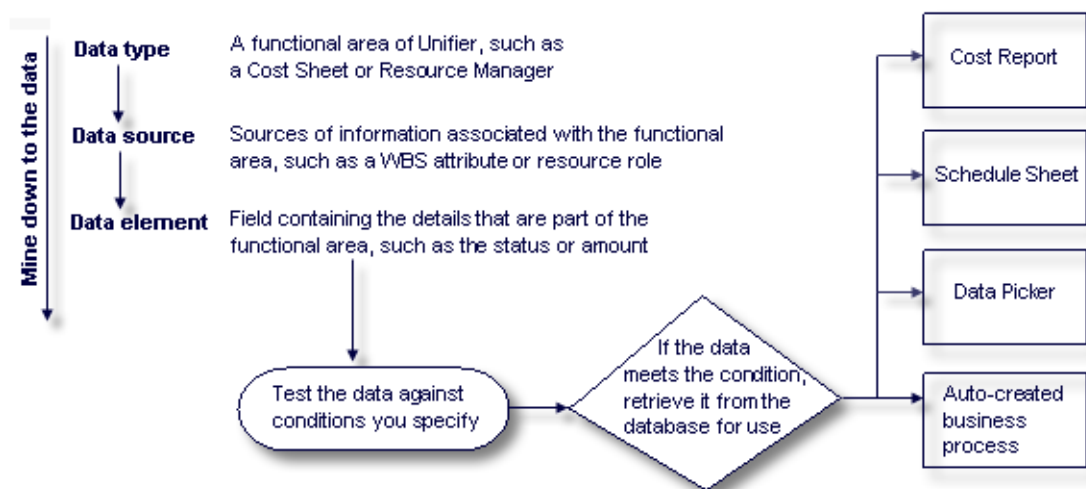
How Queries Work

The way queries work in Unifier is as follows:

- You mine down to the information you want by choosing an element (field) in the database on which to base the query.
- You test the data against conditions and values that you specify.

A condition is a state or restriction that the value in the data element (field) must meet. A condition of the value might be that it must be equal to a certain number (for example, 10) or that it must contain a certain string of letters (such as "due date of").

- When (or if) the data meets the condition you specify, the system retrieves it from the database for use in a report, manager sheet, auto-creation, data picker, and so on.



Using Formulas or Conditions in Queries

For queries, you can evaluate the data before retrieving it from the database to determine whether to include the value in the report, manager sheet, or data picker, or to spawn an auto-creation. To evaluate the data, you can use a formula or a condition.

In formulas, multiple fields can be calculated to arrive at a certain value that the data must meet before it will be used. The value can be one that you enter, or a value from another field.

You can include formulas in conditions.

In the **Condition** field, select the condition the value in the field must meet.

The following explains the formulas that you can use in a query.

Field Value Comparison

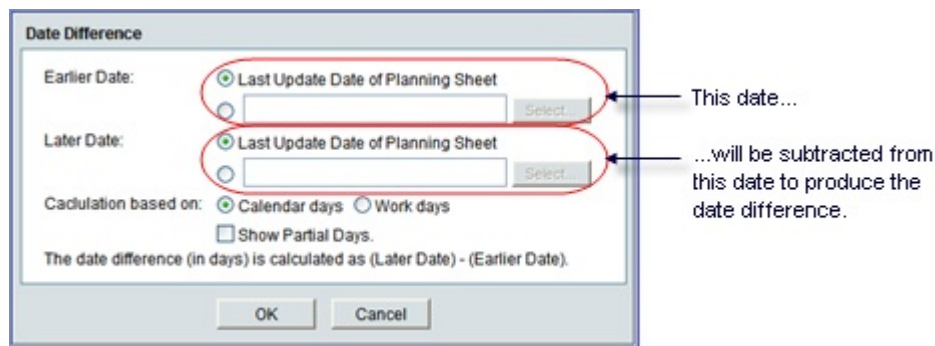
The formula for field value comparison produces data that meets a field value (string or numeric) from the form of a business process or a shell in a hierarchy, or a constant. This is then used to populate a data picker.

Date Plus or Minus

The formula for date adds or subtracts a value to or from a date.

Date Difference

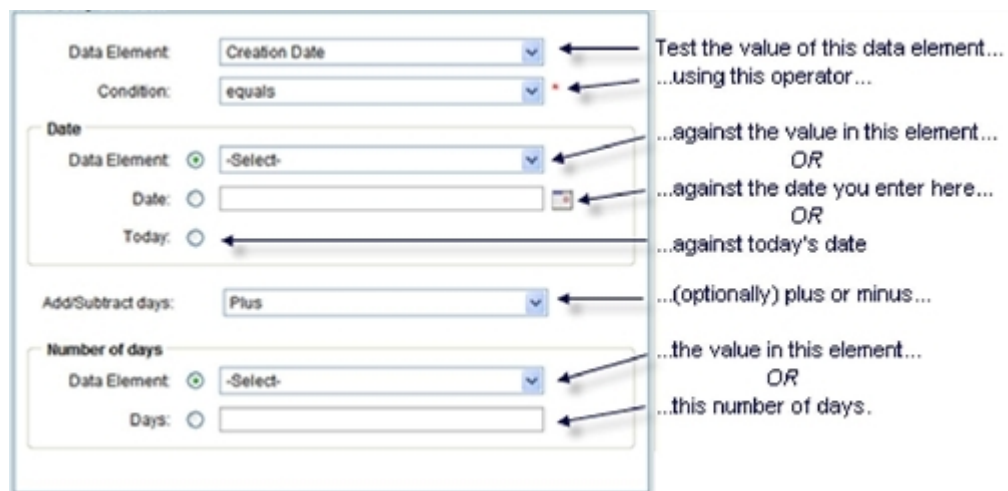
The formula for date difference subtracts one date from another to give you the number of days between the dates.



The **Date Difference** dialog box is used to calculate the difference between two dates. It features two main sections: **Earlier Date:** and **Later Date:**. Both sections have a radio button for **Last Update Date of Planning Sheet** and a **Select** button. A red oval highlights these two sections. Below these, there are options for **Calculation based on:** with radio buttons for **Calendar days** (selected) and **Work days**, and a checkbox for **Show Partial Days**. At the bottom, a text box states: "The date difference (in days) is calculated as (Later Date) - (Earlier Date)." and there are **OK** and **Cancel** buttons. Annotations on the right point to the **Select** buttons, stating: "This date..." and "...will be subtracted from this date to produce the date difference."

Compare Date Fields

You can also compare date fields as part of a query.



The **Date** comparison dialog box allows for complex date comparisons. It includes a **Data Element** dropdown (set to **Creation Date**) and a **Condition** dropdown (set to **equals**). Below this is a **Date** section with a **Data Element** dropdown (set to **-Select-**), a **Date** input field, and a **Today** radio button. An **Add/Subtract days:** dropdown is set to **Plus**. At the bottom is a **Number of days** section with a **Data Element** dropdown (set to **-Select-**) and a **Days** input field. Annotations on the right explain the fields: "Test the value of this data element... using this operator..." points to the **Condition** dropdown; "...against the value in this element..." points to the **Data Element** dropdown in the **Date** section; "...against the date you enter here..." points to the **Date** input field; "...against today's date" points to the **Today** radio button; "... (optionally) plus or minus ..." points to the **Add/Subtract days:** dropdown; "...the value in this element..." points to the **Data Element** dropdown in the **Number of days** section; and "...this number of days." points to the **Days** input field. The word **OR** is used to separate the **Date** and **Number of days** sections.

Dynamic Date Value

You can compare a date field value with a date field from the form of a business process or a shell in a hierarchy, a specific date, or today's date, and also add or subtract days to the result. This is then used to populate a data picker.

The screenshot shows the 'Add Query Condition' dialog box. At the top, 'Data Element' is set to 'Date' and 'Condition' is set to 'equals'. Below this, there are two main sections: 'Date' and 'Number of days'. In the 'Date' section, the 'Dynamic' radio button is selected, and the 'Data Source' and 'Data Element' dropdowns are highlighted with a red oval. Below this, there are options for 'Date' (with a calendar icon) and 'Today'. In the 'Number of days' section, the 'Dynamic' radio button is also selected, with 'Data Source' and 'Data Element' dropdowns highlighted by a red oval. Below this are options for 'Days' and 'Add/Subtract days' (set to 'Plus'). Arrows point from text explanations to various fields in the dialog.

Data Element: Date
Condition: equals

Date

☒ Dynamic:
Data Source: -Select-
Data Element: -Select-
☐ Date:
☐ Today

Add/Subtract days: Plus

Number of days

☒ Dynamic:
Data Source: -Select-
Data Element: -Select-
☐ Days:

OK Cancel

Test the value of this data element.
...using this operator...

...against the value of this field
in this data source (business
process or shell)
OR
...against the date you enter here...
OR
...against today's date

...(optionally) plus or minus...

...the value of this field in
this data source...
OR
...this number of days.

Between Dates

You can compare a date field value to see if it falls between two dates. This is then used to populate a data picker.

This screenshot shows the 'Add Query Condition' dialog box with the 'Condition' set to 'between'. The structure is similar to the previous one, but it includes an 'And' section for a second date condition. The 'Dynamic' radio button is selected for both date sections, and the 'Data Source' and 'Data Element' dropdowns in both sections are highlighted with red ovals. Arrows point from text explanations to the various fields.

Data Element: Date
Condition: between

Date

☒ Dynamic:
Data Source: -Select-
Data Element: -Select-
☐ Date:
☐ Today

And

Date

☒ Dynamic:
Data Source: -Select-
Data Element: -Select-
☐ Date:
☐ Today

OK Cancel

Test the value of this date
to see if it is between...

...the date in this field in this
data source (business
process or shell)
OR
...the date you enter here...
OR
...today's date...

AND

...the date in this field in this
data source
OR
...the date you enter here...
OR
...today's date.

Assignee Filter Query Condition

When you are setting up a business process, you can filter the condition for the *assignee* according to:

- Contains
- Does not contain
- Exists in
- Does not exist in
- Equals
- Does not equal
- is empty
- is not empty

The following is an example of query evaluation. The workflow setup follows these policies for selecting users.

Assignee	Query Field (Role as defined in the User Attributes Form)
A	Approver
B	Reviewer
C	Controller-Approver
D	Controller
E	Reviewer-Submitter
F	Submitter
G	Approver

The following shows examples with condition/operator:

Condition/Operator	Business Process Form (Field value) Example of the data source used.	Filtered List of Assignees
exists in	Controller-Approver	A, C, D, G
	Reviewer	B
does not exist in	Controller	A, B, C, E, F, G

Note

If the workflow setup has any of the new operators, the list of *assignees* that the user sees at runtime retains the stated query parameters.

The following shows examples with value, condition/operator, and result:

Value 1	Condition/Operator	Value 2	Result
ABC	exists in	ABC, BCD, CDE	True
XYZ	exists in	ABC, BCD, CDE	False
ABC	does not exist in	ABC, BCD, CDE	False
XYZ	does not exist in	ABC, BCD, CDE	True
ABC, BCD, CDE	contains	ABC	True
ABC, BCD, CDE	contains	XYZ	False
ABC, BCD, CDE	does not contain	ABC	False
ABC, BCD, CDE	does not contain	XYZ	True

Query Based Data Element (QBDE)

A Query Based Data Element (QBDE) lets you view data from the Upper Form or Detail Form of a Business Process (BP). QBDE also lets you view data from:

- Other BPs
- Sheets
- Cash Flow

The QBDEs are based on the "SYS Numeric Query Based" Data Definition (DD), and the query for these QBDEs is set in the Business Process Configuration setup. For more information, see [Configuring a Query for a Query Based Data Element on a BP](#).

In addition to the Web interface (Unifier application in the browser), the system evaluates QBDE in the following areas:

- CSV import for record creation
- CSV import for Line Item creation
- Web Service methods for record creation along with Line items
- Web Service methods for Line Item creation
- Web Service methods for record updates
- Bulk Edit
- Bulk Update
- Creating BP records using BP

Note

- Because the system evaluates QBDEs in a random order, Oracle recommends that you do not create a QBDE that uses a formula that references another QBDE.
- DEs that have been defined as a QBDE trigger element should not be evaluated as part of QBDE calculation.
- Oracle recommends that you do not use a Required field to create a query that uses a Data Picker, Cost Breakdown Structure (CBS) Picker, or Fund Breakdown Structure (FBS) Picker. If the data entered in a data element (DE) field with a Required condition is *cleared*, the system bases the query on the previous value of the field.
- When using QBDE, be aware that query elements are rounded off to use two decimal places, even if the Base Currency and various defined currency fields are different.

Evaluating Query Setups of Data Picker Data Elements

The system supports many types of Data Picker DEs. The Administrator can set up Query conditions on these Data Picker DEs to filter the results. When a Data Picker DE is launched in the Web interface, the system runs the query and displays the records based on the queries defined in uDesigner. The system evaluates the data picker query conditions in the following areas, as well:

- CSV import for record creation
- CSV import for Line Item creation
- Web Service methods for record creation along with Line items
- Web Service methods for Line Item creation
- Web Service methods for record updates

The following is a list of the supported Data Pickers:

- BP Data Picker
- Shell Data Picker
- User Data Picker
- CM Data Picker
- Role Data Picker

Note

If a BP Data Picker (BP Picker) or any Data Picker is selected as a trigger element for QBDE and the picker value is automatically populated (auto populated) instead of manually entered, the QBDE element will not be evaluated.

For more information about importing data, see Importing Configuration Packages.

Creating a Record from the Query Based Tab

When creating a record from the Query Based tab of another BP (that auto-populates data to the record being created), the Data Element (DE) of type "SYS Numeric Query Based" Data Definition (any DE of this type) *is not updated*, unless the user manually changes the trigger element.

If a query condition involves only constant dates, it is not converted based on the user's time zone.

Defining the Format of the Currency for QBDE

You can use the QBDE to get the count of records. As a result, you can format the DEs that are query-based to hide the currency symbol. That is, you have the option to hide the currency symbol, at the data element (DE) level. As a result, when viewing the value in a query-based DE, the system displays the correct format so that the number makes meaningful sense.

Example

A Budget Change BP may have the 'Count of Change orders' QBDE (defined as a DE of SYS Numeric Query type) associated with the BP. On the same BP, there may be another QBDE 'Sum of All Change Orders' which needs the formatting of a Currency DE. You can choose whether to display the currency symbol for these DEs at runtime.

In **Admin** mode, you define the Data Element (DE) that is query-based, add it to the BP form, and set up the query. In **User** mode, you can see the results in the run-time (for example, displaying or not displaying the currency symbol).

The Data Element properties tab of SYS Numeric Query Based Data definition contains a checkbox option for hiding the currency symbol in Cost type BP. By default, this option will be deselected.

Note

- When the same DE is placed in non-Cost BPs, this option will be ignored because these BPs do not display currency symbol for data definition with Input type of Currency Amount at runtime.
- When using QBDE, be aware that query elements are rounded off to use two decimal places, even if the Base Currency and various defined currency fields are different.

To find the DEs that are query-based:

1. Go to the **Company Workspace** tab, and switch to Admin mode.
2. In the left Navigator, select **Data Structure Setup** , and then select **Data Elements**.
3. From the toolbar, select **Find**, and enter "qbde" in the Search for field box to find the DEs.

When you open a query-based DE (**Modify Data Element** window), you have the option to select, or deselect, the Hide Currency Symbol in Cost type Business Process option.

Depending on your selection, the system displays, or hides, the currency symbol for the query-based DE.

Configuration Package

The format set in the DE must be included in the bundle.

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Background Jobs

The system uses jobs to perform various:

- Operations (such as auto creation)
- Scheduled jobs (such as user-defined report [UDR] runs)
- Record creations (from workflow [WF] templates)
- Analytics data pushes (to staging table)

There are several nodes under **System Information** that provide access to detailed information about background jobs. These nodes, **Background Jobs**, **Background Jobs History**, and **Background Jobs Statistics**, provide certain users and groups (Company Administrators) with access to a list of current jobs and their status, information about jobs that have previously run and what their schedule and impact is for running again, and a more detailed view that lets you filter and sort jobs for a visual cue that helps identify potential issues.

All current jobs (scheduled UDR, scheduled refresh of the attach flow, BP record creation using templates) across the shells are run based on the time zone that you set up in the company **Background Jobs** module (company-level time zone). In cases where the project time zone is different from the company time zone (for example, facilities based on a certain geographical location), you can go to the shell details (**Options** tab of the **Details** window) and from the **Time Zone for Background Jobs** drop-down list select the desired time zone for all shells in the log. After saving your changes, all the jobs within the shell will use your selected time zone.

Setting Permissions for the Background Jobs Nodes

Access to the **Background Jobs** nodes is controlled by permissions set in the **Access Control** node.

To set permissions for the Background Jobs nodes:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **System Information**.
4. Under System Information, open and update **Background Jobs**, **Background Jobs History**, or **Background Jobs Statistics**.
The applicable **Module Permission Settings** window opens. Here you can add, modify, or remove permission settings.
5. In the **Module Permission Settings** window, select **Add**.
6. In the **Permissions Setting for <selected item>** dialog box, select **Add Users/Groups**.
7. In the **Users/Groups** window, select the intended users or groups, and select **Add**.
8. To return to the Permissions Settings for [selected item] dialog box, select **OK**.

9. In the **Select Users/Group** section of the window, select the users or groups, and then select the applicable level of access for the user or group in the **Permissions Settings** section.
 - **Modify:** Lets the selected users and groups create or update settings. This setting includes the View permission.
 - **View:** Lets the selected users and groups view the applicable log.

Users/Groups with View permission can view the Background Jobs log without having the ability to edit the time zone. Users/Groups with Modify permission can view the Background Jobs log content and edit the time zone.
10. To save your selections and return to the **Module Permission Settings** window, select **OK**.
11. Select **Apply** to save changes and keep the window open, or select **OK** to save changes and close the window.

Using the Background Jobs and Background Jobs History pages

The **Background Jobs** log has the following toolbar options:

- **Refresh** (Edit icon () is displayed next to the field if the user has the Modify permission.
The system uses the set time zone to calculate the next start time for time-based jobs.

The **Background Jobs** log displays a sortable list that supplies the following information for each job:

- **Name:** The name of the job. Examples include: system:collect action emails, alert:Hourly Trigger, and so on.
- **Status:** The possible values are Running and Waiting. Refer to the *Unifier Data Reference Guide* for the default time zones and the possible values.
- **Next Start Time:** The time that the scheduler runs the job. The value seen here will be per User Preferences. Example: If the User preference is set, the format of the next run will be according to this time.
- **Type:** The possible values are Simple and Recurring. Simple is a type of job that was done once, at a specific time. Recurring is a type of job that is done based on a calendar schedule.
- **Priority:** The job priority. Only high priority jobs will have this column populated with the value of "High." The values for other jobs will be blank.
- **Workspace:** Displays the name or number of the shell for the job (listed under the Name column).

At the bottom of the page is the total number of jobs that exist in the system.

The **Background Jobs History** log contains the same **Refresh** and **Find on Page** toolbar options, plus includes a **Search** option () that lets you filter what is displayed in the log.

The **Background Jobs History** log displays a sortable list that supplies the following information for each job:

- **Name:** The name of the job. Examples include: BPBulkExcelUpdate_70536_1161_uxueest, DailyCFTrigger, and so on.
- **Type:** The possible values are Simple and Recurring.
- **Thread Name:** The name of the thread that executes instructions.
- **Trigger Time:** The time at which the thread started.
- **Elapsed Time (ms):** How long the thread took to run the job.
- **Delay (ms):** How long a delay, if any, occurred during the running of the job.

At the bottom of the page is the total number of jobs that have run in the past.

Using the Background Jobs Statistics page

The **Background Jobs Statistics** log provides the following options:

- **Start Date:** Lets you specify a specific day and time from which to start showing statistics for the selected chart.
- **End Date:** Lets you specify a specific day and time from which to stop showing statistics for the selected chart.
- **Select a Category:** Lets you a specific category to include in the chart, such as ADMIN or BP, or use all categories.
- **Run:** After you have set the start and end date and time and selected a category, selecting **Run** updates the chart on the page.

After you select Run, the page displays a high-level chart that depicts the number of times jobs were run for the selected category. The chart is followed by a sortable list that supplies the detailed information such as the name of the job and how long the job usually takes to run. You can use this information to identify jobs that take a significant amount of time and subsequently determine whether the job can be modified to run more efficiently.

Event Audit Log

The **Event Audit Log** functional node tracks all action events across the company that are initiated by a click, particularly when a user selects a hyperlink within the system. All hyperlink clicks are tracked from all users, regardless of their roles. The log tracks the following details:

- **Event Date:** Lists when the event occurred.
- **Action:** Lists the action taken, or the hyperlink that was selected.
- **User Name:** Lists the user that selected the hyperlink or initiated the action.
- **Origin:** Lists the shell that contains the hyperlink or action within the system. If the hyperlink or action occurs at the company level, the value in this field is the name of the Company Workspace tab.
- **Source Name:** Lists the business process that contains the selected item.
- **Source Number:** Lists the number of the record that contains the selected item. If the record was not yet created at the time of the event, the value in this field will be "New Record." This field will be blank if the event occurred in one of the following locations:
 - Cost Sheet
 - Funding Sheet
 - Generic Cost Manager
 - Configurable Manager Sheet
 - Planning Manager Sheet
 - Portfolio Manager Sheet
 - Company Settings
- **Field:** The name of the hyperlink picker from where the select was made.
- **Proxy User:** If the link was selected by a proxy user, their user name will appear here.
- **Source Type:** Lists the type of business process that contains the selected item. The possible values are:
 - Business Process
 - User Attributes
 - Document Manager
 - Cost Sheet
 - Funding Sheet
 - Generic Cost Manager
 - Configurable Manager
 - Planning Manager
 - Portfolio Manager
 - Company Settings

The toolbar of the Event Audit Log contains the following options:

- **Refresh:** Allows you to refresh the log.
- **Print:** Allows you to print the log through the following options:
 - **Print**
 - **Export To CSV**
 - **Export To Excel**
- **Search:** Allows you to search for log items based on the source type, source name, user name, or event date.
- **Find on Page:** Allows you to find items on the displayed page. When you select this option, the system inserts a row that lets you enter filter parameters.

uDesigner Overview

uDesigner is a functional module of Unifier and is enabled automatically when the system is installed. When your Test or Development environment is first provisioned, a Base Configuration Package is installed. This package contains the essential attribute forms, a single-instance shell, and a multi-instance shell, which creates a basic framework that you can use to build your own customized configurations.

The uDesigner module is used to create:

- Business Processes (BP)
- Managers (such as Asset, Cost, Document, Planning, Portfolio, Space, Shell, and so on)
- Configurable Modules
- Attribute Forms (Users, Shells, Document Manager, Cost)

Collapse by Default Option in Block Properties

In the Block Properties window of both a BP form and a manager attribute form, there is a **Collapse by Default** checkbox. If the checkbox is selected, the block is collapsed by default. If the checkbox is deselected, the block is expanded by default.

With the **Collapse by Default** option, you can avoid scrolling through irrelevant information.

Under the **Collapse by Default** checkbox, the following note is displayed: "The block will be collapsed in User mode, only if the block has a label and the Show Border and Show Label options are checked. This option is applicable only for Standard View of forms."

Collapse by Default is applicable to the following forms: Action form, View form, Detail form, and various attribute forms.

Additional uDesigner Options

You can use the uDesigner module to:

- Create a design in the **Development** environment.
- Configure, set up, and test your designs in both the **Development** environment and **Test** environment.

After this point you can import your designs to the Production environment by way of **Configuration Package**.

Oracle recommends that you:

- Create your Configuration Package in the **Development** environment and import your Configuration Package to the **Test** environment for additional testing.
- Import your Configuration Package from the **Development** environment onto the **Production** environment for use.

You can select the Unifier environment in the **Unifier Configurator**.

- The **Development** environment is a server deployed by selecting the server type as "Development" in the **Unifier Configurator**.

- The **Test** environment is a server deployed by selecting the server type as "Test" in the **Unifier Configurator**.
- The **Production** environment is a server deployed by selecting the server type as "Production" in the **Unifier Configurator**.

The **Development/Test** environment is an environment that replicates the Unifier **Production** environment.

An object (for example a BP) can be deployed multiple times only in the **Development** environment.

Note

The uDesigner functionalities are available in both the **Development** and the **Test** environments. The uDesigner functionalities are not available in the **Production** environment. The design changes made in the **Test** environment *can* be sent to the **Development** environment where you can prepare and publish the configuration package. The design changes made in the **Test** environment *cannot* be sent to the **Production** environment.

In the **Test** environment, you *can* import an unpublished Configuration Package.

In the **Test** environment, you *cannot* publish your Configuration Package.

You can only publish your Configuration Package from the **Development** environment.

The Test server is equipped with usable uDesigner and Data Structure Setup nodes so users can create or modify BP designs and include them in configuration packages and export them to another Test or Development server.

When deploying your designs, it is important to note the version numbers:

- A *deployed* version indicates that the design has been tested in the **Development/Test** environment.
- A *published* version indicates that the design has been included in a published configuration package intended for import in a **Production** environment.

Announcements Node

In addition to the Site (or System) Administrator, a Company Administrator can create Announcements. Also, a Company Administrator can define whether a particular announcement should be displayed to:

- Users
- Bidders
- Users and bidders

Note

Announcements are displayed to all the users of the owner company and all partner users. Bidders are also able to view all announcements by the Owner Company, in the Bidder Portal.

To access the **Announcements** module:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **Announcements** to open both the **Announcements** log and the **Announcement** properties page (the pane on the right).

The **Announcements** log (toolbar options) lets you:

- Create an announcement ( **Create**).
- Delete or change the status of an existing announcement (**Actions**).
- Refresh the log items (**Refresh** ).
- Print, or export, the contents of the log (**Print** ).
- Find items on the log (**Find on Page** ). If you decide to cancel the find for an entire row, you must select **Find on Page** again.

The **Announcements** log contains the following columns:

- **Title**
- **Status**
- **Last Modified By**
- **Last Modified Date**

When the log is displayed, the default sort order is descending date of records (**Last Modified Date**).

When you select an announcement record, or you hover over an announcement record, a *gear menu* () will be displayed. The *gear menu* lets you delete the selected announcement or change the announcement status.

The **Announcement** properties page (the right pane) also lets you see, or change, the details of an existing announcement. You must first select an announcement on the **Announcements** log. The **Announcement** properties page (the right pane) also lets you:

- Enter a title for your new announcement (**Title**). You must first select **+ Create**.
- Enter the text for a new announcement (**Announcement Text**). Maximum of 4000 characters, including formatting and HTML tags.
- Assign a status for your new announcement (**Status**). Active announcements cannot be deleted.
- Determine the audience (**Make an Announcement for**). The default is **Both** the Users and Bidders.

Announcement Properties

When you create an announcement record that is unread, a red bubble count-indicator icon appears on top of the **Announcements** icon . In the bubble icon, the number of unread announcements is displayed.

When there are no unread announcements, the bubble count-indicator disappears.

When you select the **Announcements** icon, a grid appears that displays all the unread announcements, highlighted in red. The announcements are displayed in descending order, according to the date.

After an announcement has been read by a user, the title of the record is displayed in black. When you select the announcement hyperlink, the announcement grid appears.

In the announcement grid, only the active (**Status = Active**) announcement records are displayed. The **Title**, **Last Modified By**, and **Last Modified Date** (for both company and system announcements) fields are also displayed.

For the system announcements created by the Site Administrator, the sign-in name of the Site Administrator is displayed in the **Last Modified By** field.

For company announcements, the full name (First + Last Name) of the user who created (**Last Modified By**) the record, is displayed in the **Last Modified By** field.

Access Control for the Announcements Node

To assign access:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **General Administration**.
4. Select **Announcements** to open the **Module Permission Settings** window (**Permission Settings for: Announcements**).
5. Select **Add**, and select **Add Users/Groups**.
6. Select a user, group, or both, and select **Add**.
7. Select **OK**.
8. Assign the permission: **Create** or **View**.

Create: Users/Groups with Create announcements permission will be able to create, modify, and view all announcements.

View: Users/Groups with View permission will be able to view the existing announcements, without the ability to modify them.

9. Select **OK**, and then select **OK** again.

Site Administrator Announcements Log

A Site Administrator can access announcements under **Customer Support** node:

1. Sign in as Site Administrator.
2. In the left Navigator, select **Customer Support**, and then select **Announcements**.

A Site Administrator can create announcements in the same way that a Company Administrator creates announcements.

Announcements created by a Site Administrator are displayed to all users.

Note

"The Make an Announcement for" option is not available for the Site Administrator.

For a Site Administrator, the following columns are displayed in the Announcements log:

- **Title**
The title from the announcement displayed in the log.
- **Status**
The current status of the announcement record is displayed in this column.
- **Last Modified Date**
The date on which the announcement record was created or last modified. This is an auto-populated field. The date is displayed in the format selected by the user, in the user **Preferences** window. When a field in an announcement record is modified and the modification is saved, the **Last Modified Date** is updated.

Note

The Announcements log does not display the Last Modified By column for Site Administrator.

Working with Integrations

The **Integrations** grouping node lets you configure third-party application integrations and set up notifications that are triggered by steps within business processes (BPs).

- If you are integrating Unifier with **Acrobat Sign** or **DocuSign**, see [Selecting and Configuring a Default System for E-Signatures](#) and see the *Unifier Adobe Sign Configuration Guide* or *Unifier DocuSign Configuration Guide*.
- If you are using **Bluebeam** with your environment, see the *Unifier Bluebeam User Guide*.
- For more information about **Event Notifications**, see [Event Notifications](#).
- For more information about other applications, such as **Primavera Analytics**, **Primavera P6**, **Primavera Gateway**, **Oracle Primavera Cloud**, and **Oracle Integration**, see [Unifier and Other Oracle Applications](#).

Selecting and Configuring a Default System for E-Signatures

Depending on what you set up and the permissions that you grant, your users can use the system to send one file or a set of files for an electronic signature (e-signature), and they can send the package to other Unifier users and to external users. If they use envelopes in DocuSign or Acrobat Sign, they can group documents into a single envelope. When the documents included in an envelope are returned to Unifier, they are consolidated into a single PDF instead of returning as individual attachments.

To set up a default system for e-signatures the first time:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select the applicable sub-node, **Acrobat Sign** or **DocuSign**.
3. Select **Download Guide**, and follow the instructions included in the guide.
4. Select **Configure**.
5. Complete the required fields:
 - **URL:** Enter the API URL that you or Oracle obtains after acquiring the license.
 - **Account ID:** (DocuSign only) Enter the ID for the DocuSign account.
 - **Client ID:** Enter the user identification needed to log on to Acrobat Sign or DocuSign.
 - **Client Secret:** Enter the client secret that is used to set up integration between Unifier and Acrobat Sign or DocuSign.
6. Select **Connect**.
If the connection is successful, the system sets the applicable application, **Acrobat Sign** or **DocuSign**, as the default.

You can add an additional application. For example, if you set up a connection to Acrobat Sign, you can also add a connection to DocuSign. When you add the second connect, the system prompts you to indicate whether the newer application should be set as the default.

To view, update, or test a connection:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select the applicable sub-node, **Acrobat Sign** or **DocuSign**.
The selected page displays the current settings.
 - **URL:** Displays the current API URL.
 - **Account ID:** (DocuSign only) Displays the ID for the DocuSign account.
 - **Client ID:** Displays the user identification needed to log on to Acrobat Sign or DocuSign.
 - **Client Secret:** Displays the client secret that is used to set up integration between Unifier and Acrobat Sign or DocuSign.
 - **Connection Status:** Displays the status, **Inactive** or **Active**.
 - **Last Validated On:** Indicates the date and time on which the connection between Unifier and Acrobat Sign or DocuSign was last validated.
 - **Set as Default:** Indicates if Acrobat Sign or DocuSign is the default option for securing e-signatures. Valid choices include: Yes or No.

Depending on whether a connection is active and whether it is selected as the default, a **More Actions** list provides access to additional options, such as **Test Connection** and **Disable**.

3. If applicable, perform any of the following actions:
 - To update information, select **Edit**, make the applicable changes, and select **Connect**.
 - If you have View permission, from the **More Actions** *** menu, choose any of the following options:
 - To view a list of projects using either Acrobat Sign or DocuSign for e-signatures, select **View Usage**.
 - To trace the history of actions taken on e-signatures, select **Audit Log**.
 - If you have Configure permission, from the **More Actions** *** menu, choose any of the following actions:
 - To modify the e-signature method used by one or projects, select **View Usage**, select the checkbox for each project you want to modify, and then select any of the following buttons:
 - * To use DocuSign for e-signatures, select **Update to DocuSign**.
 - * To use Acrobat Sign for e-signatures, select **Update to Acrobat Sign**.
 - * To discontinue using e-signatures, select **Update to None**.
 - Use the Search bar to locate specific projects.
 - To verify if a connection is working, select **Test Connection**.
 - To remove a connection as the default, select **Disable**.
 - To choose your current e-signature method as the default, select **Make Default**.
 - To trace the history of actions taken on e-signatures, select **Audit Log**.

To configure access for users and groups:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **Integrations**.
4. Use the **Acrobat Sign** and **DocuSign** nodes to assign the applicable permissions. For more information, see [Edit User or Group Permissions Using Access Control](#).

E-Signature Audit Log

If you have at least view permission for Acrobat Sign or DocuSign, you can view updates to the e-signature type in the audit log.

To access the E-signature Audit Log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Acrobat Sign/DocuSign**.
3. From the **More Actions** *** menu, select **Audit Log**.
 - The total number of audit log entries.
 - **Date**: Date on which the information was modified. Date format displays based on your user preferences.
 - **Name**: Name of the project or template.
 - **Action**: Type of action performed. Displays Modified.
 - **Old Value**: The old value of the field. Displays DocuSign, Acrobat Sign or Default.
 - **New Value**: The new value of the field. Displays DocuSign, Acrobat Sign or Default.
 - **User Name**: The name of the logged in user.
 - **Proxy User**: The name of the proxy user.
4. Perform any of the following actions:
 - In the **Search** bar, specify your filter criteria to focus on a subset of audit log entries.
 - To download the log in Excel format, select **Download** (↓).

Event Notifications

The event notifications are meant for the external applications that integrate with Unifier. When data changes (based on certain triggers), the event notifications (notification records) are generated that can be used by the external applications to pull data from Unifier.

The **Event Notifications** node has been set up by Oracle. The event notifications have already been incorporated within the design of the business processes (BPs) forms.

To access the **Event Notifications** functional node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Event Notifications**.

The **Event Notifications** log displays events that happen within the Workflow or Non-workflow BPs.

When a BP record reaches a status that is meant to generate event notifications, an entry gets listed in the **Event Notifications** log. This applies to both Workflow and Non-workflow BPs.

The **Event Notifications** log has the following toolbar options:

- **View:** This drop-down list lets you select the system-defined views that are available to all users that have access to view the **Event Notifications** log. It also lets you create and manage log views. The options are:
 - **All Notifications:** This is the default view for the log. By default, all rows in this log (sorted by Event Date and in descending order) are visible to the users.
 - **Group by Object Name:** This means grouping the rows in the grid by the "Object Name" parameter. The user has the ability to create a view and manage views. Any view created by any user who has permissions to this log will be available to all other users who have permissions to this log. Similarly, any view edited or deleted by one user will be edited or deleted for all other users using this log.
 - **Create New View:** Use this option to create a custom view. Custom views appear in the **View** list.
 - **Manage Views:** Use this option to change the order of views, show or hide views, and delete the custom views.
- **Edit View:** Lets you select which columns to display or hide, apply filters, group and sort by available fields, and save custom views.
- **Refresh:** To update the information displayed on the screen.
- **Print:** To print the information displayed on the screen. Your options are:
 - **Print**
 - **Export To CSV**
 - **Export To Excel**
- **Search:** To open a screen and search for a record by applying value operators in columns.
- **Find on Page:** To find items on the displayed page. When you select this option, the system inserts a row that lets you enter filter parameters.

The **Event Notifications** log has the following columns:

Column Name	Description	Applies to WF BPs	Applies to Non-WF BPs
Shell Number	Populates with the shell number where the event was triggered.	Yes	Yes
Shell Name	Populates with the name of the shell where the event was triggered	Yes	Yes
Object Type	Populated as "Business Process"	Yes	Yes
Object Sub-Type	When the Object Type = Business Process, the Object Sub-Type is populated as Workflow or Non-workflow, based on the type of the BP.	No	Yes
Object Name	Populated with the name of the Business Process in which the event was triggered	Yes	Yes

Column Name	Description	Applies to WF BPs	Applies to Non-WF BPs
Record Number	Populated with the "record_no" value of the BP record that triggered the event	Yes	Yes
Event Date	Populates with the date and time, when the event was triggered. The content of this column is in descending order, which is the default sort format.	Yes	Yes
WF Step From	Populates when the event notification is for a <i>WF BP</i> . This column is populated with the name of the <i>starting step</i> of the record that have triggered the notification generation.	No	Yes
WF Step To	Populates when the event notification is for a <i>Non-WF BP</i> . This column is populated with the name of the <i>final step</i> of the record that have triggered the notification generation.	No	Yes
WF Action Name	Populates with the WF action name that was taken for the BP record that triggered the notification. The same BP could go through several events which trigger the notification generation. Each such event inserts a corresponding row in this log.	No	Yes
Old Status	The original status of the BP record (before the event was triggered)	Yes	Yes
New Status	The final status of the BP record that satisfies the event trigger condition	Yes	Yes

The **Event Notifications** log lists Workflow BPs and Non-Workflow BPs:

Workflow BPs	Non-Workflow BPs
For the Workflow BPs, the grid displays a record of all the workflow actions that are taken within the BP records, and which are set with the Generate event notification option as checked, in uDesigner. A Workflow BP step completion policy does not impact the creation of the notification row. Regardless of the completion policy, if an action (which is set up to generate an event notification) is taken in the Workflow BP record, the notification row is inserted in the log. If there are multiple assignees on a step, the final action on the Workflow BP record, which moves the record to the next step, determines what will be included as an event notification row in the grid, not each action taken by an assignee. If a task is reassigned and the new assignee takes an action that moves the record to the next step and the record is configured to generate a notification, the system also inserts an event notification row in the grid.	For the Non-workflow BPs, the notification records are generated when the BP record reaches the status that has been designed to trigger event notification. Upon reaching the status, the system inserts a notification row in the grid. If you select Edit on a Non-workflow BP record and proceed to select Finish Edits with making any changes, but the status change is set to generate notifications per the design, the system inserts a notification row in the grid.

Setting Up Permissions for the Event Notifications

The visibility of **Event Notifications** log is driven by permissions.

To set the permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **Integrations**.
4. Select **Event Notifications** to open the **Module Permission Settings** window.
5. Set the **View** permission to users and groups as needed.
Under the **Permission Settings for: Event Notifications** block you can select users or groups and either modify (**Modify**) or remove (**Remove**) the existing permission.

To add a new user and add permissions, select **Add** to open the **Permission/Access Control** window. In the **Permissions Settings for: Event Notifications Select Users/Groups** block, select **Add Users/Groups** to add users or groups. In the **Permission Settings** block, select **View** to select and select **OK** to grant this permission to the users or groups that you have selected.

When finished, select **Apply**, and then select **OK** to close the window. To discard your changes or close the window, select **Cancel**.

Users or groups with the **View** permission have the ability to:

- a. See the **Event Notifications** node in the left Navigator.
- b. Take actions using available options in the log toolbar.
- c. View all notifications records within the log.

Working with the License Manager

The **License Manager** controls the number of active users (Standard Users, Portal Users, Collaborator Users, and Earned Value Management Users) allowed in the system based on agreed license terms. The licensing purchased by your organization determines whether EVM is included.

 Note

Standard Users refer to both *Company* and *Partner* users.

The license terms (that is, the number of allowed users) used for **License Manager** are maintained by the *Site Administrator* and cannot be edited by the *Company Administrator*.

To define the threshold for License Manager notifications:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**.
3. In the upper-right corner, select **Settings** , and select **License Terms**.

The Earned Value Management block in License Manager is seen only when the module is loaded. When licenses are provided for the Earned Value Management module, an additional Earned Value Management checkbox is available in the Edit User dialog for standard users. Select the checkbox to designate users as Earned Value Management module users, within license terms.

Your *Company Administrator* can access the **License Manager** to:

- View the current named users and user record limits.
- View the usage charts.
- Print usage reports.

Your *Company Administrator* can set up the **License Manager** to notify the *Company Administrator* (or other designated user) automatically when the number of users is approaching the limit.

If the number of users exceeds the number of available licenses, the system sends notifications to the following:

- Users specified in the **Unifier Configurator** (WebLogic).
- Users who have **Notify** permission in the **License Manager**, which was set in **Access Control**.

The **License Manager** counts users with status of **Active** or **On-Hold**. The term "active named user" refers to any user in the system who has an **Active** or an **On-hold** status.

A user with the **Inactive** status is not counted against the license terms, and you can add/import any number of **Inactive** users.

View License Manager Terms and Usage

The License Manager console provides easy access for viewing license terms and usage.

To view the License Manager console:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**. The License Manager console opens in the right pane. Depending on the licensing purchased by your organization, you might see the following:
 - **Standard Users:** This block is always displayed and provides the total license count for *Company* and *Partner* users.
 - **Portal Users:** This block is displayed when the environment has a license count of portal users greater than zero.
 - **Collaborator Users:** This block is displayed when the environment has a license count of collaborator users greater than zero.
 - **Earned Value Management Users:** This block is displayed when the module is loaded.

Each block has the following information:

- **License Terms:** Displays the number of **Active Named Users** — that is, any user with a specific user name and password — in the sponsor company and all partner companies. ("Active" refers to users with a status of Active or On-Hold.)
- **Current Usage:** Displays the current number of Active Named Users (users with status Active or On Hold for your company and partner companies. Usage refers to user records only, regardless of whether the users are currently signed in. (Current Usage also displays the "as of" date and time of the last update.)

To view the License Terms window:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**.
3. If you are a Site Administrator and you want to update the license terms, in the upper-right corner, select **Settings**  and select **License Terms**.

When you edit the user count, you enter a combined number for active named users. Depending on the licensing purchased by your organization, the Site Administrator can also edit the Portal Users and Earned Value Management Users counts.

- The **General** tab displays your company's current license terms. This tab is read-only and managed by the Site Administrator.
- The **Notifications** tab lets you schedule regular usage checks and configure thresholds for notifying you when you are getting close to license term limits.

Set Up License Manager Scheduled Runs and Notifications

You can set up the License Manager to notify you when the number of active users in your company or partner companies is approaching the established license limits.

Note

Notifications will only be sent if a scheduled run is set up and enabled. Notifications will only be sent to users or groups who have been given explicit Modify or Notify Permissions.

To set up notification and threshold limits:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**. The License Manager console appears in the right pane.
3. In the upper-right corner, select **Settings** , and select **License Terms**.
4. On the **Notifications** dialog box, complete the fields as described in the following table, and select **Apply**.

In this field:	Do this:
Enable Notifications	To enable notifications regarding License Term thresholds, select this checkbox. These email notifications will be sent to users or groups who explicitly have Modify or Notify permissions. Notifications are sent only after scheduled runs.
Notification Thresholds • Standard Users • Portal Users • Collaborator Users • Earned Value Users	For each type of user, enter the threshold values for active named users in your company and partner company. (The licensing purchased by your organization determines whether EVM is included.) For example, if you want to be notified when the number of active named users in the system reaches 80% of your license terms, enter 80 in the applicable field. Note The threshold value calculates against the number of allowed active users in the license terms. After the threshold limit has been reached, users will continue to receive notifications during every scheduled run.
Scheduled Runs	To generate notifications, you must schedule usage runs. These runs check for currently active named users in your company and partner company. You will receive notification of these runs only if threshold values have been reached. Choose the frequency: Weekly, End of day: Select the day of the week. Monthly: Select the day of the month.

Print License Manager Information

You can print a copy of the current license manager console view.

To print license manager terms and usage:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**. The License Manager console appears in the right pane.
3. In the upper-right corner, select **Print** . The information appears in a printable HTML format in a separate browser window.

View or Print the License Manager Audit Log

The audit log captures changes made to license terms. You can view the audit log, search for specific changes, print a copy, or save a PDF copy to your local drive.

To view or print the Audit Log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, and then select **License Manager**. The License Manager console appears in the right pane.
3. In the upper-right corner, select **Settings** , and select **Audit Log**. The Audit Log opens. You can scroll through the list of events, sort the list by selecting the applicable heading, or select **Find on Page**  to search for a specific entry.
4. To view a record's detail, which includes for reference the current time zone of the user viewing the audit log, double-click a listed event.
5. To print or save the log, select **Print** , and then select the applicable output option after the PDF file is created.

Viewing and Managing Cash Flow Jobs and Auto Snapshots

Because your organization might have multiple cash flow jobs and automatic snapshots scheduled to run for a multitude of projects, you can use the Cash Flow Jobs functional node to manage the jobs and auto-snapshots and their impact on system performance. The Cash Flow Jobs log provides an overview of all the projects and their status. For example, you might disable the settings for any project whose Configuration Status is On-Hold or Inactive. Or perhaps your organization has 10,000 projects managed through the system. Of those, 4,000 have reached a completed status but the cash flow jobs are still running every day because the end date was not added or updated in the refresh schedule. Instead of updating each of the 4,000 projects separately to disable the refresh job, you can use the Cash Flow Jobs log to disable multiple jobs simultaneously.

Using the Cash Flow Jobs log, you can sort the information displayed by selecting a column header, such as Project Status or Auto Refresh. You can also limit the information displayed by using the Search option. Before or after you filter what is displayed, you can print the log or export it to a Microsoft Excel or comma-separated value (CSV) file.

You must have the **Modify** permission to use this page to disable the Refresh Schedule and Auto Snapshot settings for any project managed within your organization.

To set the permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **System Information**, and select **Cash Flow Jobs**.

To filter the list of items displayed:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **Cash Flow Jobs**. The Cash Flow Jobs log is displayed.
3. From the toolbar, select **Search** .
4. In the **Search** tab, use the various options to filter what is displayed in the log, and then select **Apply**. The system displays all the items that met the search criteria you entered.

To disable the refresh or snapshot or both:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **Cash Flow Jobs**. The Cash Flow Jobs log is displayed.
3. If applicable, sort or filter the list of jobs and snapshots.
4. If you only want to disable the Refresh Schedule or Auto Snapshot for specific jobs and there are additional jobs displayed in the log, select the applicable jobs.

5. From the toolbar, select **Actions**, and select one of the following:
 - **Disable Auto Refresh**, and then select **Selected Cash Flows**: To disable the Refresh Schedule for the selected items, select this option.
 - **Disable Auto Refresh**, and then select **Filtered Cash Flows**: To disable the Refresh Schedule for all the items displayed after the log is filtered, select this option.
 - **Disable Auto Snapshot**, and then select **Selected Cash Flows**: To disable the Auto Snapshot for the selected items, select this option.
 - **Disable Auto Snapshot**, and then select **Filtered Cash Flows**: To disable the Auto Snapshot for all the items displayed after the log is filtered, select this option.
 - **Disable Auto Refresh and Auto Snapshot**, and then select **Selected Cash Flows**: To disable the Refresh Schedule *and* Auto Snapshot for the selected items, select this option.
 - **Disable Auto Refresh and Auto Snapshot**, and then select **Filtered Cash Flows**: To disable the Refresh Schedule *and* Auto Snapshot for all the items displayed after the log is filtered, select this option.
6. When the confirmation message appears, select **Yes** to continue or **No** to cancel.
After the update is processed, the Audit Log for the applicable cash flow is also updated to reflect the change.

To print or export the list of items displayed:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **Cash Flow Jobs**.
The Cash Flow Jobs log is displayed.
3. If applicable, sort or filter the list of jobs and snapshots.
4. From the toolbar, select **Print** , and select one of the following:
 - **Print**: The system generates a PDF version of the log, which you can save or print.
 - **Export To CSV**: The system generates and downloads a CSV version of the log.
 - **Export To Excel**: The system generates and downloads a Microsoft Excel version of the log.

Using the BP Visualizer to View Business Processes

Most organizations use a significant number of business processes (BPs) to facilitate business logic within Unifier. In addition to looking at a BP in uDesigner, which is where they are created and modified, you can use the BP Visualizer to see how a BP is set up. You can use the BP Visualizer to view information about BPs deployed in an environment and detailed information about each one, including their statuses, forms, logs, workflows, references, integrations, data elements (DEs), data definitions (DDs), and general information. You can view the cross-references between BPs and various objects, such as DEs. You can also use the BP Visualizer to compare different versions of a BP to examine the changes that have been made to it, which might be useful if you are responsible for determining whether a new version is ready for deployment or for identifying a change that caused a BP to stop working in the expected manner.

To access BP Visualizer node, you must have the View permission, which can be granted by an administrator.

To set the View permission:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **System Information**, and select **BP Visualizer**.
4. In the **Module Permission Settings** window, select **Add**.
5. In the **Permissions Setting for <selected item>** dialog box, select **Add Users/Groups**.
6. In the **Users/Groups** window, select the intended users or groups, and select **Add**.
7. To return to the Permissions Settings for <selected item> dialog box, select **OK**.
8. In the **Select Users/Group** section of the window, select the users or groups, and then select the **View** level of access for the user or group in the **Permissions Settings** section.
9. To save your selections and return to the **Module Permission Settings** window, select **OK**.
10. Select **Apply** to save changes and keep the window open, or select **OK** to save changes and close the window.

To access the BP Visualizer:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **BP Visualizer**. The Business Process list is displayed.

You can scroll through the list of BPs, use the up and down arrows next to the headings to sort information in an ascending or descending order, or use the **Filter** option to refine the display (see [Filtering the List in the BP Visualizer](#)). You can select any BP in the list to see detailed information about it, such as forms, logs, and workflows.

The BP Visualizer log includes information for each BP ranging from the ID and name through the date that it was created and the date on which it was last modified. After you select a BP, the page for that BP provides the following tabs:

Tab	Description
General	Provides high-level information about the BP, such as the ID, Name, Version, and Type.
Statuses	Identifies the statuses available for the BP, such as Completed, and indicates whether the status is a Terminal one.
Forms	Lists the forms that are part of the BP, such as Upper, Detail, and View, and provides access to details about each form.
Logs	Indicates the logs that are updated as part of the BP and provides access to details about each log.
Workflows	Lists the workflows that the BP can follow and lets you view the workflow itself. For non-workflow BPs, this tab is empty.
References	Lists the cross-references that might involve the BP, ranging from a BP that might result in the automatic creation of the selected BP to all the pickers, data elements (DEs), and attributes.
Integrations	Provides data integration information, such as the labels and DEs, and indicates whether data flows in one direction or both.
Data Elements	Provides detailed information about each DE used in the BP.
Data Definitions	Provides detailed information about each data definition (DD) used in the BP.
Compare Versions	Lets you compare any two versions of the BP and view all changes or filter to show only information that was changed, added, or removed.

Filtering the BP Visualizer List

To filter the list of items displayed:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **BP Visualizer**. The Business Process list is displayed.
3. In the **Filter** field, type text to filter by. The Filter applies to the following fields: **ID**, **Name**, **Type**, and **Source**.

The list of BPs is updated to display BPs that contain the text you typed.

Examining Forms

You can use the Forms tab to view the forms that are part of the selected BP. For example, you might want to see if an Action or View form is part of the BP, and if so, what triggers it. You can drill down through the Forms of a BP and look at various fields and properties.

To examine the forms of a BP:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **BP Visualizer**.
3. Select a BP.
4. In the **BP Visualizer [BP Name]** window, select the **Forms** tab.
A list of forms is displayed. You can open any of the forms and view more detailed information.
5. To return to the list of BPs, select **Show BPs**  in the upper-left corner.

Examining Workflows

You can use the Workflows tab to view the different workflows that the selected workflow BP might be used in. You can drill down through a workflow and look at the steps involved using different presentations. You can also review the information available for each step, such as the corresponding status for a BP record.

To examine the workflows of a BP:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **BP Visualizer**.
3. Select a BP.
4. In the **BP Visualizer [BP Name]** window, select the **Workflows** tab.
5. In the list of workflows, select **Data Workflow**  for the one that you want to view.
6. To return to the list of BPs, select **Show BPs**  in the upper-left corner.

Examining References

You can use the References tab to view the all the links within a BP and between the selected BP and others.

To examine the references of a BP:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **System Information**, and then select **BP Visualizer**.
3. Select a BP.
4. In the **BP Visualizer [BP Name]** window, select the **References** tab.
5. Use the various options, such as **Layout**, to change the display.
6. To return to the list of BPs, select **Show BPs**  in the upper-left corner.

Comparing BP Versions

You can compare any two versions of a BP design.

To compare versions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **System Information**, and then select **BP Visualizer**.
3. Select a BP.
4. In the **BP Visualizer [BP Name]** window, select the **Compare Versions** tab.
5. In the **Comparing** section, select a version from the **Version 1** list and the **Version 2** list. Differences are listed in alphabetical order for the elements that have changed. System-generated changes are also included in the comparison.

You can use the options in the **Filter** to display all modifications or to display only specific changes.

- **All:** Displays all differences.
 - **Modified:** Displays the data that has been modified in the second version. Items that differ between the two versions are highlighted in yellow.
 - **Added:** Displays the data that has been added to the second version. Items that exist in the later version but not the earlier version are highlighted in green.
 - **Deleted:** Displays the data that has been removed from second version. Items that exist in the earlier version but not in the later version are highlighted in pink.
6. To see detailed information about the modifications made to any part of the BP, expand the branches of the configuration.
 7. To return to the list of BPs, select **Show BPs**  in the upper-left corner.

Activity Manager

Unifier enables you to create, consolidate, and monitor activities that must be completed on a schedule by way of the **Activity Manager**.

Note

Unifier also enables you to set a series of rate rules that should be applied when certain conditions are met in a project by way of the Master Rate Sheet.

Activity Manager Module

To access the module:

1. Go to the shell tab, and switch to **User** mode.
2. In the left Navigator, select **Activity Manager**.

For details about the Activity Manager, Rate Sheet, and Master Rate Sheet, see the .

Activity Manager Permissions

You can use the following options to grant permission to the **Activity Sheet** under the **Activity Manager** node.

To set permission levels for the Activity Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, expand **Activity Manager** (or **Schedule Manager** if you have access to it), and then select **Activity Sheet**.
4. Grant any of the following available permissions:
 - **Get Data:** If enabled, the user can use **Get Data** for the system **Activity Sheet**, which will update the system **Activity Sheet** from P6 or Oracle Primavera Cloud. When enabled, the **View** permission will be enabled, automatically. If you deselect the **View** permission, Unifier deselects the **Get Data** permission. You cannot assign the **Get Data** permission without the **View** permission, but you can assign the **View** permission without the **Get Data** permission.
 - **Send Data**
 - **View:** If enabled, the user can view the **Activity Sheet** node along with the activity sheets present in that node (if any).

To set permission levels for the Rate Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.

3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, expand **Activity Manager**, and then select **Rate Sheet**.
4. Grant any of the following available permissions:
 - **Full Access**
 - **Create:** If enabled, the user can create a **Rate Sheet**.
 - **View:** If enabled, the user can view the **Rate Sheet** node at Company Workspace along with the **Master Rate Sheet** present in that node (if any).

To set permission levels by using Permission Templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Permission Templates**.
3. Open the applicable template, and select the **Permissions** tab.
4. In the **Modules For** section, expand **User Mode Access**, expand **Projects/Shells**, and then expand **Activity Manager**.
5. Under Activity Manager, assign the applicable permissions for **Activity Sheet** and **Rate Sheet** as described earlier.

Master Rate Sheet Permissions

You can use the **Create** and **View** options to grant permission to the **Master Rate Sheet** under the **Activity Manager** node.

To set permission levels for the sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Company Workspace**, and then expand **Master Rate Sheet**.
4. Grant any of the following available permissions:
 - **Create:** The **Create** option will be seen at the same level as **Get Data**. The **Get Data** option in the Master Rate Sheet log is enabled based on the **Get Data** permission. If enabled, the user can create a Master Rate Sheet by using the **Create** option in the log.

When **Create** permission is granted, if a Master Rate Sheet exists (defined through integration), the user can add resources and roles in the existing Master Rate Sheet.

- **View:** If enabled, the user can view the resources and roles, both the ones that have been created through integration and the ones created manually.

About Consent Notices (Administrator)

Consent notices inform users how personal information (PI) is collected, processed, stored, and transmitted along with details related to applicable regulations and policies. Consent notices also alert users that the action they are taking may risk exposing PI. Unifier helps you to ensure that you have requested the appropriate consent to collect, process, store, and transmit the PI your organization holds as part of Unifier data. Consent notices are switched *off* by default in Unifier.

Consent notices should:

- be written in clear language which is easy to understand.
- provide the right level of detail.
- identify the purpose and legal basis for your collection, processing, storage, and transmission of PI.
- identify whether data will be transferred to named third parties.
- identify PI categories and list the data which will be collected, processed, stored, and transmitted.

Note

If an administrator provides consent on behalf of other users, it is the administrator's responsibility to ensure the consent has been provided by the users through other means.

About Personal Information

Personal information (PI) is any piece of data which can be used on its own or with other information to identify, contact, or locate an individual or identify an individual in context. This information is not limited to a person's name, address, and contact details. For example, a person's IP address, phone IMEI number, gender, and location at a particular time could all be personal information. Depending on local data protection laws, organizations may be responsible for ensuring the privacy of PI wherever it is stored, including in backups, locally stored downloads, and data stored in development environments.

In Unifier, the custom data, which might include personal information, is also stored when a customer:

- Configures the system to store, or collect, data in a business process form (BP form).
- Configures the system to store, or collect, data in other modules.
- Adds additional fields to the forms that collect the users' information, during the user creation process.
- Uploads documents that contain user information.

Personal information may be visible in multiple areas of the system, including but not limited to:

- User administration
- Records in various business processes
- Tasks
- Documents
- Reports
- Dashboards

Personal information may be at risk of exposure in multiple areas of the system, including but not limited to:

- Dashboard or custom prints
- Reports
- Documents
- Web Services
- Unifier Mobile

Cookies in the system

When using Unifier, the server may generate cookies and send them to the user's browser. The user's machine stores the cookies, either temporarily by the browser, or permanently until they expire or are removed manually.

Each user that signs in to Unifier web will see a notification banner (Cookies in Unifier) that notifies the user that Unifier uses cookies. This banner has a link to the Unifier cookie policy which explains what information is being tracked by way of cookies. The user must click **Got It** to access the rest of the Unifier application.

Oracle might use cookies for authentication, session management, remembering application behavior preferences and performance characteristics, and to provide documentation support. Also, Oracle might use cookies to remember your log-in details, collect statistics to optimize site functionality, and deliver marketing based on your interests.

Permission Control for Consent Notice

You can assign **Consent Notice** permissions in the following permissions-related modules:

Access Control

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **General Administration**, and then expand **Consent Notice**.

User Administration

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **User Administration**.

4. Assign Consent Notice permissions through the **Company Users**, **Partner Users**, or **Groups** sub-nodes.

Standards & Libraries

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Permission Templates**.
3. In the right pane, use **Permission Templates** to assign Consent Notice permissions.

Permissions can be given by anyone who has access to the nodes.

Users who have the **Modify** permission will be able to modify the setup and other details related to **Consent Notice**, for either user or bidder consent.

If a user has only the **View** permission for the **Consent Notice** node, the user will have only permission to view the setup and will not be able to make any edits to the consent notice setup or other details.

Your Responsibilities

Information security and privacy laws can carry heavy penalties and fines for organizations which do not adequately protect PI they gather and store. If these laws apply to your organization, it is your responsibility to configure consent notices before they are required. You should work with your data security and legal teams to determine the wording of the consent notices you will configure in Unifier.

If a consent notice is declined, it is your responsibility to take any necessary action. For example, you may be required to ensure that data is not stored or shared.

Personal Information (PI) Data in the system

PI may be visible in multiple areas of Unifier, including but not limited to user administration, business process workflows, assignments, work products and documents, reports, user defined fields, codes, calendars, project websites, and timesheets.

PI may be at risk of exposure in multiple areas of Unifier, including but not limited to business process workflows, assignments, work products and documents, reports, user defined fields, codes, calendars, project websites, and timesheets.

As part of Unifier Cloud Services, you might be using an identity domain to manage your user access and entitlements across multiple cloud and on-premises applications and services. If you are using or accessing an identity domain, you are responsible for deleting your details and data from the identity domain. You are responsible for retrieving your content in the identity domain during your applicable services period.

Configuring Consent Notices

To configure Consent Notices for the system:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, select **Consent Notice**, and then select **User Consent**.

The **Consent Notice** node can be seen by the site administrator (on-premises customers only and in the system admin mode) and by the default company contact (in the respective company).

You can independently manage the **Consent Notice** in all Unifier environments (Development, Test, and Production).

You can see the status of consent acceptance for users. You can also reset consent acceptance for all users if there is a need to regain consent after a consent notice has changed.

The **Consent Notice** node has the following sub-nodes:

- **User Consent**
Use this sub-node to set up consent notice for the web, mobile, self-service, portal, and Unifier /m sign-ins.
 - **Consent Status**
Use this sub-node to audit and track the users who have accepted the terms.
- **Bidder Consent**
Use this sub-node to set up consent notice for the bidder portal sign-in.
 - **Consent Status**
Use this sub-node to audit and track the bidders who have accepted the terms.

If you enable consent notices, you must enter consent notice text. Work with your data security and legal teams to determine the wording of the consent notices. If no content is detected, the system displays the message: *The default consent notice is required if the consent notice option is enabled.*

Configuring Consent Notices for User Signing In through Web

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, select **Consent Notice**, and then select **User Consent**.
The **Setup** window, which opens by default, has the following options:

Enable Consent Notice: This option is selected by default. You can use this option to enable the consent notice for signing in to the system through the web, self-service portal, and mobile device.

Default Consent Notice: This option lets you enter the default consent notice for the environment when the consent notice is enabled. You should work with your data security and legal teams to determine the wording of the consent notices you will configure in Unifier. You can enter the consent message (text) into the system directly as formatted text or HTML text.

Note

Oracle does not recommend direct copy-paste of text from external sources in the provided editor for consent notices because direct copy-paste from external sources impacts the behavior of text seen for users. Copy-paste of text from a Word document or a pdf file is supported in the provided editor.

If you select **Save** without entering the consent notice, the system displays the message: *The default consent notice is required if the consent notice option is enabled.*

Note

When you set the consent notice in this node, the consent notice will be applicable to both the web and mobile sign-ins.

Send notifications when users reject the consent notice: This option lets you set users or groups to be notified when a user rejects the consent notice.

Cancel: Lets you undo all the changes that you have made across all tabs. Users who have View permission will not see this option.

Save: Lets you save all the changes that you have made across all tabs. Users who have View permission will not see this option.

Preview: Lets you preview the content of the consent agreement.

Other tabs are language-specific consent notices that are supported in the system. If you enter content for a specific language then the language specific consent notice will be displayed to the users based on the user preferences for language. For example, when the language preference (Preferences) is set to Dutch, and the Dutch consent notice is not entered, the user will see the default consent notice content when signing in (web or mobile). The user will see the Dutch consent notice only when a Dutch consent is entered.

Auditing Consent Notices for Users Signing In through Web

To audit consent status for users signing in through web:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, select **User Consent**, and then select **Consent Status** to display the log.
3. Review the status for each user.

You can use the **Consent Status** log to track user acceptance.

The system tracks users based on the following responses to the consent notice:

- Accepted
- Rejected
- Not Responded

By default, all users are tracked as *Not Responded*. When users sign in through web/mobile and accept or reject the consent notice, the system tracks their responses and assigns a status accordingly.

If you disable the consent notice option after it was enabled in an environment, the system will not reset the tracking status for web/mobile consent and tracking statuses will remain as they were.

The following toolbar options are displayed on the **Consent Status** log:

View: Lets you see the following out-of-the-box (OOTB) views:

- All
- Group by Consent Status

When the view is changed to Group by Consent Status, by default the groups will be collapsed and an additional toolbar option of Expand/collapse will be displayed.

Search: Lets you find information about any user or group by way of:

- Name
- Email Address
- Title
- Company
- Status
- Record Number

Find on page: Lets you filter the contents of the log.

Print: Lets you print the contents of the log.

Reset Accepted Consent: This option is available when the consent notice option is enabled. This option lets you reset the **Accepted** consent status to **Not Responded** when there are changes in the agreement. Users who have View permission will not see this option.

The following columns are displayed on the **Consent Status** log:

- Name
- Email Address
- Title
- Company
- Record Number
- Status
- Time

Configuring Consent Notices for Bidders Signing In through Web

The site administrator (in the system admin mode) and the default company contact (in the respective company) can enable the consent notice for bidders by using the **Bidder Consent** node. If you enable consent notices, you must enter consent notice text. If no content is detected, the system displays the message: *The default consent notice is required if the consent notice option is enabled.*

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, select **Consent Notice**, and then select **Bidder Consent**.
The **Setup** tab, which is open by default, has the following options:

Enable Consent Notice

This option is selected by default. You can use this option to enable the consent notice for signing in through the Bidder portal.

Default Consent Notice

This option lets you enter the default consent notice for the environment when the consent notice is enabled. You can enter the consent message (text) into the system directly, as formatted text or HTML text. This is a required field and you must enter the consent notice. If

you select **Save** without entering the consent notice, the system displays the message: The default consent notice is required if the consent notice option is enabled.

Note

When you set the consent notice it will be applicable to both the web and mobile sign-ins.

Send notifications when users reject the consent notice

This option is selected by default. This option lets you set users or groups to be notified when a user rejects the consent notice.

Cancel

Lets you undo all the changes that you have made across all tabs. Users who have View permission will not see this option.

Save

Lets you save all the changes that you have made across all tabs. Users who have View permission will not see this option.

Preview

Lets you preview the content of the consent agreement.

Other tabs are language-specific consent notices that are supported in the system. If you enter content for a specific language, the language-specific consent notice is displayed to the users, based on the user preferences for language. For example, when the language preference (Preferences) is set to Dutch, and the Dutch consent notice is not entered, the user will see the default consent notice content when signing in (web or mobile). The user will see the Dutch consent notice only when a Dutch consent is entered.

Auditing Consent Notices for Bidders Signing In through Web

To audit consent status for bidders signing in through web:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **General Administration**, select **Consent Status**, select **Bidder Consent**, and then select **Consent Status** to display the log.
3. Review the status for each user.

You can use the **Consent Status** log to track the bidders who have accepted the terms through signing in by way of bidder sign-in.

The system tracks bidders based on the following responses to the consent notice:

- Accepted
- Rejected
- Not Responded

By default, all the bidders seen are tracked as Not Responded. The bidders listed have been invited to bid by way of invitations. For existing and upgrade users, all bidders who received an invitation to bid are listed in the log.

When users sign in through the bidder portal and accept or reject the consent notice, the system tracks their responses and assigns a status accordingly.

The log shows all bidders with Not Responded status before the web consent is enabled for first time.

The following toolbar options are displayed on the **Consent Status** log:

View: Lets you see the following out-of-the-box (OOTB) views:

- All
- Group by Consent Status

When view is changed to Group by Consent Status, by default the groups will be collapsed and an additional toolbar option of Expand/collapse will be displayed.

Search: Lets you find information about a user or group by way of:

- Name
- Email Address
- Title
- Company
- Status
- Record Number

Find on page: Lets you filter the contents of the log.

Print: Lets you print the contents of the log.

Reset Accepted Consent: This option is available when the consent notice option is enabled. This option lets you reset the **Accepted** consent status to **Not Responded**, for example if there are changes in the agreement.

The following examples explain how the system administers consent notices in the case of an email address or user ID changes:

Example One

The email address of vendor record V1 was changed from Email1 to Email2, and the user id Email1 was assigned to vendor record V2.

The system displays a new entry for the user ID (in the Consent Status log) after the invitation is sent to the new email address. The system *retains* the consent agreement provided to the previous user ID.

Example Two

The email address of vendor record V1 was changed from Email1 to Email2, and the user id Email1 has left the organization.

The system displays a new entry for the user ID (in the Consent Status log) after the invitation is sent to the new email address. The system *removes* the consent agreement provided to the previous user ID, and the entry for that user ID is not displayed in the Consent Status log.

The following columns are displayed on the **Consent Status** log:

- Name
- Email Address
- Title

- Company
- Record Number
- Status
- Time

Translating Custom Strings (Internationalization)

User-created content (also known as custom strings) can be translated into different languages.

Examples:

- Business process (BP) names
- Data element (DE) labels
- Drop-down labels
- Radio button labels
- Navigation log names

Note

For a DE to be translatable, it must be based on a data definition (DD) that defines both values and labels. For example, multi-select DEs, user-entered data in BPs, attribute forms of various Managers, and similar runtime elements cannot be translated.

The Internationalization node (a sub-node of the Configuration node) contains all custom strings created by users. The strings listed in the Configuration - Internationalization log provide the necessary details for translation.

Note

- Users can translate custom-defined strings into various supported languages. The Internationalization module lists all user-created custom strings and provides relevant details for translators.
- The numeric fields support international number formats (standards).
- The system displays all available currencies and their respective symbols.

Oracle provides translations for the following languages:

- Arabic
- Chinese (Simplified)
- Chinese (Traditional)
- Dutch
- English

- French
- German
- Italian
- Japanese
- Korean
- Portuguese (Brazilian)
- Russian
- Spanish

Internationalization Node Properties

To access the Internationalization node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Internationalization** to open the **Configuration - Internationalization** log.

Within the log, you can:

- Determine which log items qualify for custom strings translation.
- Select to see 100 or 200 items per page.
Use the **Display** drop-down list on the right side of the log.
- Change the order of the items in the **Source Type** column.
- Change the sequence of the languages displayed in the log as explained in the following section.
- See the list of all Custom Strings available for translation.

To select which languages must be displayed in the log list:

From the **Configuration - Internationalization** log toolbar, select **Language Log** to open the Language Log dialog box. This dialog box has the following tabs:

- **Languages**
Displays the following information:
 - Column: Displays the column number (in the **Configuration - Internationalization** log) corresponding to a particular language.
 - Language: Displays the name of the language.
 - Status: Active (for languages that are available for use) or Inactive (for languages that are not available for use). Select the cell to change the status. The **General** tab in the **Modify Translation String** window will list languages with Status = Active so that you can modify the translation strings for each of those languages.
 - Default: Lets you select one language as the default language for the system.
- **Columns**
In this tab, only languages that have been marked as **Active** in the **Languages** tab will be displayed.
 - Column: Displays the column number (in the **Configuration - Internationalization** log) corresponding to a particular language.

- **Language:** Displays the name of the language.
- **Show Language:** Lets you select which languages will be displayed in **Configuration - Internationalization** log and elsewhere where the language is available for use.

To change the sequence of the languages displayed in the log:

1. To rearrange the order of languages displayed on each row in the log list, select a language, and select **Move Up** or **Move Down**.
Alternatively, you can double-click the number next to the language, edit the number, and select **Update Order**.
2. When finished, select **Update Order**, **Apply**, and **OK**.
3. Use **Refresh** to update the list in the Internationalization Log. The following explains the refresh options:
 - **Strings:** Use this option to refresh the Internationalization log with the source strings belonging to a particular source type. The system prompts you to select the Source Type of the strings that need to be refreshed.
When you select Strings, the Refresh Strings window opens, which lets you select or deselect the source types that you want the system to display. Select **OK** to save your changes, **Cancel** to terminate the change.
 - **All Strings:** Use this option to refresh the Internationalization log with *all* custom strings from *all* source types. This operation might take a few minutes.
When you select All Strings, a Confirmation message window opens explaining the system status. Review the message and proceed as desired.
 - **History:** Use this option to see the history of refresh requests: Requestor, Source Type, Submit Date, End Date, and Status. You can view History details after the refresh is complete.

The following explains the function of each toolbar option in the Internationalization Log:

- **Open:** This option lets you open the translated custom string.
- **Export:** This option lets you export strings for bulk translation.
- **Import:** This option lets you import a file that is ready (translated) into the system, or log.
- **Delete:** This option lets you delete translated custom strings.

 Note

You can delete a custom string *only* if it has not been used elsewhere.

- **Find:** This option lets you filter out the custom strings that are available in the log.

 Note

When you select this option, you must select a source type and provide search operator for the string that you want to find.

- **Language Log:** This option lets you set the sequence of log columns.
- **Refresh:** This option lets you refresh the items in the log with new or modified custom strings that qualify for custom translation.

The following explains the function of each menu option in the Internationalization Log:

Note

You can perform the functions of menu options using the toolbar.

- **File:** This option allows you to perform: Open, Export, Import, and Refresh
- **Edit:** This option allows you to perform: Delete, Language Log
- **View:** This option allows you to conduct a search: All, Find
- **Help:** This option allows you to access: User Help, Admin Help, uDesigner Help, Unifier Library, and User Productivity Kit.

The CBS Code Label and CBS Item Label data elements are available as source strings, for Internationalization.

The following data elements are not available as source strings, for Internationalization:

- CBS Code
- CBS Picker
- CBS Description

Also, the text "CBS Picker" is a system-defined string and not available as a source string, for Internationalization. If you want to change the text "CBS Picker," you can use the label name for the "bltemID" data element for the picker title. For example, if "Cost Code" is the label name for the "bltemID" data element, the picker title is "Cost Code Picker."

Note

After you change the picker name, ensure that you do the same in the related column of the CSV, or Excel, import file to prevent import failure.

Internationalizing Environments

A translated custom string can be used in the **Development** environment, **Test** environment, and **Production** environment.

You can use the "XLIFF" file across the two environments using the export and import functions.

Workflow

First, export the custom string (translated) using the Export option out of one environment. Then, using the Import option, import the exported custom string (translated) into the other environment.

Note

- The transfer of translated custom strings can be done one language at a time.
- If a custom string does not exist in the destination environment, that custom string cannot be used; however, the custom string will be available in the Internationalization Log.
- If you add a source string to your source type in the **Development/Test** environment, but this source string does not exist in the **Production** environment, upon exporting the XLIFF file to the **Production** environment, the source string will carry over.

Translating Methods

There are two methods available in the system for translating custom strings:

- **User Interface**
Use this translation method only when you add or modify a limited number of custom strings.
- **Export/Import**
Use this translation method when you must translate a large number of custom strings. This method is particularly useful to professional product-translators because the system provides a file format (.XLIFF) that streamlines the translation efforts (Export). After the translations are completed, the Company Administrator, or a User with appropriate permissions, can access the node and import the translated file back into the system (Import). The translation is done for one language at a time.

To use the User Interface translation method:

1. Go to the **Internationalization** node.
2. Select the custom string that you want to translate.
3. From the toolbar, select **Open** to open the Modify Translation String window. The **Source Type** and **Source String** fields are read only.
4. In the field enter a description explaining the context and usage of the custom string that you are about to translate.
5. Modify, or add to, the existing translations. You can enter multiple languages for the custom string.
6. When finished, select **Apply** and then **OK**.

Each custom string is unique according to the custom string Source Type and Source String. The Source Type displays the Source String category. Data Structure, uDesigner, and Reports are some of the options under Source Type.

Example

A designer designs a Data Element (DE) with the label: Vendors. The Business Process is also named: Vendors. Since both the DE and BP constitute a design element, the Source Type is: uDesigner.

Language codes

Use the following information to match the language settings:

- Chinese (Simplified): zh_CH
- Chinese (Traditional): zh_TW
- English: en
- French: fr
- German: de
- Italian: it
- Japanese: ja
- Korean: ko
- Portuguese (Brazil): pt_BR
- Russian: ru
- Spanish: es

To use the Export/Import translation method:

1. Go to the **Internationalization** node.
2. Select the custom string that you want to translate.
3. Select **Export** from the toolbar to open the Export Options window.
4. Select values for the following fields:
 - **Source Language**
The current language of the custom string. (Example: English)
 - **Target Language**
The language that the source custom string has to be translated into. You can only select one language. (Example: German)
 - **Source Type**
To allow you to filter the custom string for export base on a particular Source Type. The drop-down list contains values such as: Data Structure, Reports, and so on. (Example: Business Process Setup)
 - **Include Translated Strings**
This is an optional parameter. By default, this option is selected.
 - If *selected*, the custom strings (source strings) that are currently translated into the selected language will be exported, also.
 - If *deselected*, only the custom strings (source strings) that are not translated into the selected language will be exported.
5. Select **Export** to open the **File Download** window. The file download operation follows the Unifier standard file download process.
The exported file is in ".XLIFF" format and the file name contains "Unifier" (Unifier+-<Language Name>.XLIFF).

The number of characters allowed in the file name is based on Unifier standard. For supported version of the "XLIFF" file refer to the *Unifier Tested Configurations* document.

The exported file contains the following information: ID, Source String, Target Language, and Note.

The Source String is the base for all translations, the Target Language is the language selected, and the Note is a placeholder, which stores notes for the translators. The source language attribute for the exported file originates from the Source language selection at the time of export.

6. Save the file in your local folder and open the file using a program such as Notepad or WordPad.
7. Open the saved XLIFF file, review the declaration information, and search for <source>. Example: <source>Assets</source>
8. Enter a new line, include the target language information, and save the file. Example: <target>Aktiva</target>
9. Change the value of "approved" to "yes." Example: <trans-unit id="l5ZQE6Yw9eD/h+JchexCKco1fHnsw0CBQne0aR7L86IugwBoiYsRbBpmz+fhygs3" approved="no">
If you have exported .XLIFF file prior to 21.8, your exported file will not be compatible after 21.8. For new translations, on or after 21.8, Oracle recommends that you export the strings again.
10. Proceed to import the file back to Unifier.

When the file is ready, use the Import option to bring the translated file back into the system.

1. Go to the **Internationalization** node.
2. From the toolbar, select **Import** to open the standard File Upload window.
3. Select **Browse**, and import the translated file (Unifier-,Language Name.XLIFF). Basic file replacement and override apply.

At this point, the translated custom strings map to the appropriate language settings and are ready to be used.

 Note

The Oracle Database column size must not exceed the storage size of 4000 bytes.

Assigning Permissions

The Company Administrator assigns access permissions to the Internationalization node, and the permissions can be set for both Users and Groups.

There are two types of permissions available for the Internationalization node:

- Configure
- View

Users who have *Configure* permission can translate the custom strings, and Users who have *View* permission can only view the translated custom strings.

To assign permissions to a user through the **Company Users** or **Partner Users** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select either **Company Users** or **Partner Users**.
3. Select a user from the log.
4. Go to the **Permissions** tab.
5. Expand **Administration Mode Access**, expand **Configuration**, and select **Internationalization**.
6. Assign permissions as necessary.

To assign permissions to a user with **Access Control**:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the pane on the right, expand **Administration Mode Access**, expand **Configuration**, and select **Internationalization**.
4. Select **Add**.
5. Select **Add Users/Groups**.
6. Select all users to assign permissions to, and select **Add**.
7. Select **OK** when finished.
8. In the **Permission Settings** block, assign *View* or *Configure* permissions to all selected users.
9. Select **OK** when finished.

Displaying Custom Strings and System Strings

The following describes how Custom Strings and System Strings are displayed in Admin mode and while defining Sheets and User Defined Reports (UDRs).

Note

- Multi-select data elements (DEs), user-entered data in business processes (BPs), attribute forms of various Managers, and similar runtime elements cannot be translated.
- For a DE to be translatable, it must be based on a data definition (DD) that defines both values and labels.

Content displayed in the UI (also known as System Strings) cannot be modified by users. System Strings are available in different languages and are displayed based on user preferences.

Examples of System Strings:

- Sign In and Terms and Condition pages
- Menus
- Alerts
- Errors

In contrast, user-created content (also known as Custom Strings) can be translated into different languages.

Examples of Custom Strings:

- BP name
- DE label
- Drop-down (pull-down) values
- Radio button

- Text in lines
- Navigation log names

System Strings are translated according to the language set in the User Preferences window.

Custom Strings are translated based on the specifications defined for the source string in the XLIFF file.

When System Strings and Custom Strings are combined (concatenated), such as in a form:

- The System String portion is translated according to user preferences.
- The Custom String portion is translated based on the XLIFF file specifications.

As a result, different fields within the same object may appear in different languages.

In general, translated Custom Strings are not displayed in Admin mode, except in the following cases:

- Attribute forms
If a translated Custom String exists for an attribute form, it is displayed in Admin mode.
Example: If a DE named "Building Name" has a German translation, the details page displays the German value in Admin mode.
- Pages shared between User mode and Admin mode
If translated Custom Strings are available, they are displayed in Admin mode and remain consistent when switching to User mode. This applies to:
 - Code-based Configurable Manager Sheet templates
 - Record-based Configurable Manager Sheet templates
 - Asset Class templates
 - Shell Dashboard templates
 - UDR templates

Administration Mode

In Admin mode, content displayed in the UI (also known as System Strings) cannot be modified by users. The System Strings are available in different languages and are displayed based on user preferences.

Examples of System Strings

- Sign In and Terms and Condition pages
- Menus
- Alerts
- Errors

In contrast, user-created content (also known as Custom Strings) can be translated into different languages.

Examples of Custom Strings:

- Business Process (BP) name
- Data Element (DE) label
- Drop-down (pull-down) values

- Radio button
- Text in lines
- Navigation log names

System Strings are translated according to the language set in the User Preferences window.

Custom Strings are translated based on the specifications defined for the source string in the XLIFF file.

When System Strings and Custom Strings are combined (concatenated), such as in a form:

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If translated Custom Strings are available, they are displayed in Admin mode and remain consistent when switching to User mode. This applies to:
 - Code-based Configurable Manager Sheet templates
 - Record-based Configurable Manager Sheet templates
 - Asset Class templates
 - Shell Dashboard templates
 - User Defined Report (UDR) templates

Internationalization and CSV Files

Importing and exporting data can be done by using a Comma-Separated Values (CSV) data file or a CSV template file. This section explains how the availability of different languages (Internationalization) impact the various CSV files created, used, imported, or exported.

Note

Number formatting is not supported for Symbols that are based on a right-to-left language such as official languages of Afghanistan or Hebrew.

Generic CSV files

Language preferences are detected from the **Preferences** settings (**Region Format**), for both CSV data files and CSV template in:

- All column headers
- All informational text

If importing a CSV file fails, the import error file displays the system generated error messages in the preferred language.

If importing a CSV file fails because of form validation errors, the custom error message displays the message in the preferred language.

Note

- If translation is not available for a custom error message, the source string is displayed.
- Before importing a CSV file, always check the **Preferences** settings to see the allowed format and number formatting.
- When importing, or exporting, a CSV file, the date format follows the **Preferences** window (**Region Format**) Date Format settings.

Additional information about exporting and importing CSV files

When importing and exporting of a CSV file is conducted by users with two different language settings (for example, French and German), the data entered into an exported file must match the original language set.

Example

The CSV template Export has been done in French and the template is being used by a German User. If the German User enters data without changing the column structure and Imports the file, the Import action will fail and an error message will appear in German, indicating the error.

Internationalization and Web Services

About Web Services

New records can be created and line items can be added using Integration through web services. Also, the Schedule Manager, which was deprecated starting with version 23.5, integrates with Primavera scheduling software by way of web services, which lets you update existing schedule sheets.

As Project Administrator, you can receive email notification of the successful creation of a shell instance, for shells that are created manually through web services, a CSV file upload, or through auto-creation. This notification can be set up in email notifications in uDesigner. Also, you can set your **Preferences** to control whether you receive these notifications.

Web Services and Internationalization

The output data generated by web services is always in the source language.

Note

If a record (Example: Business Process) is created by using web services and the Data Definition (DD) label includes a non-ASCII string, the record creation will fail.

Number formatting of data

When you enter numeric data in XML, you can only use the decimal point (period) and negative sign (dash).

Examples

XML Tag: <Committed_Amount>100.99</Committed_Amount>

XML Tag: <Credited_Amount>-1423.99</Credited_Amount>

Sample JSON request

```
"data": [  
  {  
    "uuu_quantity": 6000.258,  
    "amount": -27600.0,  
  }  
]
```

When you run a Get call, the input content in the response XML or JSON will be in the language of the source strings.

Get Web Services

You can use the Get Web Services call methods to get various attributes of Shell, CBS, and the list of Business Process records, Shells, and User defined data.

When you run a Get call, the input content in the response XML will be in the language of the source strings.

Number formatting does not apply to the numeric data and the decimal point is a period. The negative numbers are displayed with the minus sign before the numeric data, for example, -12345.99.

① Note

Number formatting is not supported for Symbols that are based on a right-to-left language such as official languages of Afghanistan or Hebrew.

Internationalization (Email Notifications)

When the system generates an email notification, the language used for that email is based on the recipient's **Preferences**.

Email notifications for scheduled User-Defined Reports (UDRs), Gates, and so forth, have two components:

- Text
- Attachments

If a Business Process (BP) email notification contains an attachment with the record information, the Custom Strings and number formatting in the attachment is according to the **Preferences**.

If a scheduled UDR is sent as a part of an email attachment, the language in the PDF attachment is according to the **Preferences** of the UDR owner; however, the email text content is according to the recipient's User Preferences.

When a UDR is generated manually and saved by a User, the language in the PDF attachment is according to the **Preferences** of the User who generated, or ran, the UDR.

If a scheduled job such as Project Gates, where the "Auto-email as PDF attachment to users and groups" option is selected, the language in the PDF attachment is according to the User Preferences of the creator of the job (Project Gates creator).

When a manual refresh of the Gates is requested, the language in the PDF attachment is according to the **Preferences** of the User who requested the refresh.

Internationalization (Support for Tools)

When used within the system, the following tools support internationalization:

- Oracle Map
- AutoVue Server
- Flex replacement (O charts)

Note

The Unifier Plug-ins do not support internationalization.

Oracle Map viewer supports internationalization for Tier 1 languages. For more information, refer to the *Oracle Fusion Middleware User's Guide for Oracle*.

The language displayed in the map, and the following subsequent areas, is according to the language selected in the **Preferences** of the user:

- View map for BP records from log
- Shell Landing Page
- Map Picker in Log Find
- Map Picker in Bulk Edit
- View Map when invoked from the BP record

Note

eLocation services, which is used for geocoding, does not support internationalization. As a result, the map labels are displayed in English. If a user enters a label in a different language, the Find feature does not provide the desired results.

Internationalization (Oracle Analytics Server Custom Reports)

The Oracle Analytics Server Reports support internationalization as follows:

Custom Report (Report File tab) window

If there are no templates available for the report, the Custom Report window (Report File tab) displays according to the default settings.

To upload the translated XLIFF files and report layout, select **Add** to open the Add Template and Files window, enter data in the required fields, and select **OK**.

Note

- The non-RTF templates do not support internationalization.
- You can only change the template type when the template is in Creation stage. After you create a template, you cannot change the template type. Use the report designer to create a template with the desired template type and remove the template that is no longer needed.

In the Custom Report window (Report File tab), the only editable column is the Default column, which lets you set the default template by selecting the corresponding template.

Note

The system sets the first template, or XLIFF file, that you upload as the default template.

Use **Modify** in the Custom Report window (Report File tab) to modify an existing template. After you select Modify, the Modify Template and Files window opens, which lets you modify the template and the translated XLIFF file for that template. When finished, select **OK**.

Use **Download** in the Custom Report window (Report File tab) to download a template and the corresponding translated XLIFF file, in a zip file.

External Data Model Oracle Analytics Server Reports

If you want to download the data model of a template, select the template, and select **Download** in the Custom Report window (Report File tab). When the download is complete for an Oracle Analytics Server report, the data model is included.

Non-RTF type template

Oracle Analytics Server supports RTF templates and XLIFF files. If the report designer selects a non-RTF type template, the Browse option in the Modify Template and Files window (Translated XLIFF files for the Template section) will be disabled.

Custom Report (Query tab) window

Queries based on Data Definition (DD) support internationalization and number formatting associated with internationalization according to the **Preferences** settings.

Queries based on Data Views do not support internationalization and formatting because raw data is being used.

Queries based on Ad-Hoc support internationalization and number formatting associated with internationalization according to the **Preferences** settings.

Internationalization (Dashboards)

Shell Dashboards

The Shell Dashboards support Internationalization and number formatting for System Strings as well as Custom Strings according to the **Preferences** settings.

Internationalization (Help Files)

Unifier Help files do not support Internationalization and are not translated.

Note

You can translate the Help files using a third-party translator and display the files based on your **Preferences** settings. This includes uploading a single PDF with multiple language help information.

Internationalization (Spell Check)

The Spell Check feature does not support Internationalization.

Note

If the language selected in your **Preferences** is not English, the Spell Check option will not be available.

Internationalization (Date and Time Zone Formats)

Date formats

The following additional date formats support Internationalization:

- MM/DD/YYYY
- DD/MM/YYYY
- MM/DD/YY
- DD/MM/YY
- MM-DD-YYYY
- DD-MM-YYYY
- MM-DD-YY
- DD-MM-YY
- DD.MM.YYYY
- YYYY-MM-DD
- MMM/DD/YYYY
- DD/MMM/YYYY

- YYYY/MMM/DD
- M/D/YYYY
- M/D/YY
- D/M/YYYY
- D/M/YY
- YY/M/D
- YYYY/M/D
- YY/MM/DD
- YYYY/MM/DD

Time Zone formats

The Time Zone setting is based on the Coordinated Universal Time (UTC) and supports Internationalization.

Note

The time format for all dates is: HH:mm AM.

Internationalization (Audit Log)

Within the Audit log, the following columns support Internationalization according to the **Preferences**:

- Event
- Description
- Field

System and custom strings can be translated for Event, Description, and Field columns.

Configuring and Publishing Oracle Analytics Server Custom Templates (Custom Prints and Reports)

Unifier integrates with Oracle Analytics Server to deliver on-demand web-based reporting.

Note

- If your environment supports a dedicated integration with Oracle Analytics Cloud, you can assign specific Unifier users the option of creating and managing Unifier-related reports through Oracle Analytics Cloud. Because access is not provided automatically, you must include the system-defined DE `uuu_useraccess_oac` in the Additional Attributes segment of the User Attributes form and enable the Oracle Analytics Cloud Access option for the user on the General tab of the Edit User window.
- Importing and synchronizing reports from Oracle Analytics Server is supported for on-premises and single-tenant (ST) configurations of Unifier (these actions are not supported with the multi-tenant [MT] configuration).

Custom Reports, built in Oracle Analytics Server, enable the Company Administrator (or power user) to build visually stunning, detailed reports. For example:

- A report that combines information from multiple (and possibly non-linked) Business Processes (BPs)
- A report that needs professional looking graphics, charts, images, or clip art

The following sections explain how to create and configure custom prints and custom reports in the Oracle Analytics Server.

To *publish* custom prints and custom reports:

1. Prepare the custom print or custom report.
2. Select **Status**.
3. Select **Publish**.

Note

Oracle only supports the delivery of Oracle Analytics Server reports in PDF format by way of email.

Custom Templates (Custom Prints and Reports) Overview

To access Custom Prints and Reports sub-node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Custom Templates**.
3. If formatting tags such as indentation, tables, ordered lists, and unordered lists used in Unifier Rich Text Editor (RTE) data elements are not rendering correctly in Custom Prints:
 - a. From the **Custom Templates** log (right pane), select the specific Custom Print template. Ensure it is in **Draft** status.
 - b. From the toolbar, select **Status**, and then select **Draft**.
 - c. If necessary, reselect the Custom Print template.
 - d. From the toolbar, select **Status**, and then select **Published**.

This applies to both, Internal and External Data Models.

To run custom reports:

1. Go to the **Company Workspace** tab, and switch to **User** mode.
2. In the left Navigator, select **Reports**.

Note

Data views are required for creating custom reports.

The **New** option of the **Custom Templates** log (or select **File** and then select **New**) lets you create the following:

Option	Description
Custom Print with Internal Data Model	When the user selects New, selects Custom Print, and then selects Custom Print with Internal Data Model, the print template window displays the Data Model Type set as Internal Multiple. Any new custom print templates will be of data model Internal Multiple and can be used for bulk printing and single-record printing. Existing custom print templates of data model type Internal can still be used for single-record printing. The tags generated for the XML data in the Sample data tab are grouped differently for data model type of Internal Multiple, and the template designers must use the new XML data structure and create layout templates.

Option	Description
Custom Print with External Data Model	External data models can be created outside of the system. They can include links to multiple tables and pull data from multiple Business Processes. These data models can be used to create custom print templates. You can create a Custom Print template based on an external data model. The concept of creating a Custom Print template based on an external data model is similar to the concept of creating a Custom Print template based on an internal data model, except that the user creates, uploads, and maintains the data model needed for creating Custom Print template based on an external data model. When the user selects New, selects Custom Print, and then selects Custom Print with External Data Model, the print template window displays the Data Model Type set as External Multiple. Any new custom print templates will be of data model External Multiple and can be used for bulk printing and single-record printing. Existing custom print templates of data model type External can still be used for single-record printing. The external data model must contain parameters that support printing of multiple records. The Record IDs pass as comma separated value.

Option	Description
Report with Internal Data Model	Create an Oracle Analytics Server Custom Report based on the standard data model, which is generated and maintained internally by the system. When you save the Custom Report, the system saves changes applied to the following in the data model: • Data views • Data links • Query parameters • Additional parameters The Custom Report window contains the following tabs and fields: General • Name • Description • Data Model Type The value for the Data Model Type field in the General tab is set to Internal (read-only). • Report Level • Main View Views Your selected values for the Report Level and Main View fields (General tab) determines the fields in the Views tab. • Description • Data Model Type The value for the Data Model Type field in the General tab is set to Internal (read-only). • Report Level • Main View - The Main View is not a required field while creating the Report with External Data Model. - Users can add the Main View to a Report with External Data Model if they want to add query parameters for the report. Query Parameters

Option	Description
Report with External Data Model	Create an Oracle Analytics Server Custom Report to upload the custom data model file created using Oracle Analytics Server. The system will not maintain the data model file. You can generate sample data for an external model-based report provided that the external model-based report is published at least once. To do this, you must externally modify the .XDM file either manually or by using the Oracle Analytics Server data model editor, and then upload the report again. This option has the same tabs as the Report with Internal Data Model option. The value for Data Model Type field in the General tab is set to External (read-only). The value for Main View depends on the following conditions: • If an External Data Model was generated by converting an Internal Data Model report, the value for Main View is set according to the Internal Data Model report. • The user is allowed to clear the value for Main View and save the report only if there are no Query parameters defined for the converted report. • The user is able to generate sample data as before. Generation of sample data is possible after the report has been published at least once.

Option	Description
Custom Email with Internal Data Model	Customize the emails that are sent to bidders who are not a part of the system. You can include any of the business process data, and the email-related data, in the notification that you want sent to the bidder. This option is used to send email notifications for the Request for Bid (RFB) business processes. The Custom Email window contains the following tab and fields: General - Name - Description - Data Source Lists the Request for Bid (RFB) business processes so that you can create the custom email notification. - Data Model Type The value for the Data Model Type field in the General tab is set to Internal (read-only). - Email Type - Login Information - Bid Invitation - Due Date Change After you are finished, select Apply to set the values for your template and sample data in the following tabs of the updated Custom Email window: Template File You can upload multiple Rich Text Format (RTF) templates. You can select any template as the default template and change the default when required. Select Add to upload a template file that you want to use to customize your email. The system uses the parameters set in the Add Template window to format the email, using the Oracle Analytics Server. Sample Data After you add a template, go to the Sample Data tab to select a sample data for the custom email. You can generate the sample data xml from the Sample Data tab and download the sample data xml to create the layout files. You can export the published Custom Emails using the Configuration Packages feature. All the fields available in the Custom Print version of a Request for Bid (RFB) business processes are available for the Custom Email version. In addition, the following email-specific fields are available as sample data: - From Requestor: The user who has sent across the Bid invitation. - Email: Email ID of the requestor. - Phone: Phone number of the requestor. - Sent for: This field signifies what is the invitation for and has a value of 'Bid'. - Username: The user name of the Bidder (Email ID of the Bidder) - Password: The password that needs to be sent across to the Bidder.

Option	Description
	• New Due: The changed value of the Due Date of the Bid. • Bid URL: This is the URL which the bidder needs to use to login into the Bid portal. • Contact First Name(uu_contact_first_name): This is the First Name of the Vendor's Contact. • Contact Last Name(uu_contact_last_name): This is the last Name of the Vendor's Contact. After you have configured the design of the custom email, you can save your changes and publish your design to the Oracle Analytics Server. The Notification tab of the Request for Bid (RFB) business processes will contain all your added options. You must select a notification (Custom Notifications) for: • Bid Invitation • Login Information • Due Date Change Each notification has a list of templates that have been published at least once.

When Oracle Analytics Server Custom Print templates are created using external data model, the system does not generate any additional data models for use in the print template.

If a custom print template of **Internal_Multiple** has been converted, the resulting data model will be **External_Multiple** and will be available for bulk printing.

Copying a template will copy the data model associated with the source template.

Use the options in **Find** to select the data models **Internal_Multiple** and **External_Multiple**.

Assigning Roles and Permissions to Oracle Analytics Server User to Publish and Run Reports

If you want to publish and run Unifier reports, the following roles and permissions must be assigned to the Oracle Analytics Server user (who integrates Unifier and Oracle Analytics Server):

- Oracle Analytics Server Consumer: Open
- Oracle Analytics Server Content Author: Traverse
- Oracle Analytics Server Service Administrator: Full Control

Creating Data Model (.XDM) File

To create an .XDM file, you can either:

- Create the .XDM file from a local Oracle Analytics Server, or
- Copy any existing .XDM file, from an existing report, and create an .XDM file.

Note

To create an .XDM file that works with the system, you must make changes in the .XDM file, accordingly.

Custom Templates Windows Log

The following applies to all Custom Prints and Reports (Internal Reports and External Reports).

Users do not need a separate set of permissions to access the External Reports in the Custom Prints and Reports log. Users who have permissions to the **Custom Templates** node can view the External Reports in **Admin** mode.

In **User** mode, because the External Reports appear as a list, the permission settings are the same as those for Internal Custom Reports (View).

The Custom Prints and Reports windows log (**Custom Templates - Current View: All**) displays information such as the name, description, and modification date.

Name

- Name of Print template or name of Report.
- For External Reports: This field displays the name of the report populated from the Oracle Analytics Server.
- For Custom Print: The name of the print template, as entered in Unifier.
- For Internal Reports: The name of the report as entered in Unifier.
- The maximum character length is 255. After 255, the characters will be truncated.

Description

- Description of Print template or description of Report.
- For External Reports: This field displays the description of the report populated from the Oracle Analytics Server.
- For Custom Print: The description of the print template, as entered in Unifier.
- For Internal Reports: The description of the report, as entered in Unifier.

Type

- Custom Print
- External Reports: The reports that are created in the Oracle Analytics Server, and are displayed here, will have a Type: External Reports.
- Internal Reports: The reports that are created in Unifier will have a Type: Internal Reports.
- Custom Email

Location

This column is empty and not available for use.

Data Model Type

Internal or External for both Print and Report.

Key

- System-generated unique ID.
- For External Reports: The key starts with "uuu_ext"
- For Print or Internal Report: The key starts with "uuu_"

Report Level

The value is blank for Print. For Internal and External reports, it shows Project or Program.

Status

- Displays whether the report is in one of the following conditions:
- Invalid (only applicable for the External Reports)
- Draft
- Publish

Publish Date/Synch Date

- Date the record was last published, or synchronized, in the Oracle Analytics Server and Unifier. This field will be blank when status is changed to Draft/Invalid.
- For External Reports: The date when the report is synchronized (from Oracle Analytics Server to Unifier). (Supported only for on-premises and ST configurations.)
- For Custom Print: The date that the print template was published to the Oracle Analytics Server.
- For Internal Reports: The date the reports were published to the Oracle Analytics Server.

Last Modified By

Name of the user who last synchronized the record.

Note

When transferring Custom Reports by way of configuration package, the Custom Reports name and level must match in both source environment and destination environment.

The toolbar contains the following options:

- New
 - Custom Print with Internal Data Model
 - Custom Print with External Data Model
 - Report with Internal Data Model
 - Report with External Data Model
 - Custom Email with Internal Data Model
- Open
- Copy
- Delete
- Status
- Find

- Synchronize External Reports

New

The External Reports are created in the Oracle Analytics Server. The New option enables the user to create Internal Reports and Custom Print templates.

Open

The user uses the Open option to open an External Report.

Copy

This option is disabled if you select a record in the Custom Print, or Reports, logs that is an External Report type.

Delete

For External Reports: The user can use this option to delete External Reports that have "Invalid" status. This option is disabled if the selected External Report is in "Published" status.

For Internal Reports: The user can use this option to delete an Internal Report that has never been Published.

For Custom Prints: The user can use this option to delete a Custom Print that is in "Draft" or "Published" status.

Status

The status for all imported External Reports is "Published." The values for this column are:

- Draft
- Published
- Invalid
 - The "Invalid" status is only applicable to External Reports. This status does not apply, and is not available, for Internal Reports and Custom Print records.
 - The system assigns the "Invalid" status if a report that has been previously imported to the system is no longer in the Oracle Analytics Server.
 - You can delete an External Report that has the status "Invalid" from the log.
 - If the user had the permission to view an External Report at runtime and the status is now set as "Invalid," the user cannot view the External Report at runtime.

Find

The Find option, on the toolbar, lets you search for a particular record in Custom Prints and Reports log. The options for finding a report are:

- Name
- Type
- Location
- Data Model Type
- Last Modified By

Synchronize External Reports (On-Premises and ST Only)

The Synchronize External Reports option, on the toolbar, lets you synchronize data between the Oracle Analytics Server and Unifier.

This option allows you, the Administrator, to update the system with the reports created in the Oracle Analytics Server. When you select Synchronize External Reports, the system connects to Oracle Analytics Server to retrieve reports through Web Services.

You can set the level of the report (Report Level) in the Synchronize External Reports window that opens after you select **Synchronize External Reports**.

After the synchronization is complete, you can set the permissions, per Report Level, in Unifier. During the runtime, all changes to the report design, such as data model, layout, translation files, and so forth, will be applied.

The following rules apply when you synchronize *external reports*:

- The **Synchronize External Reports** window displays all the new reports that exist in the Oracle Analytics Server.
- Reports that exist in both Oracle Analytics Server and Unifier (same reports in terms of count, name, and location), do not appear in the Synchronize External Reports window.
- When you select **Synchronize External Reports**, the system synchronizes all reports. You cannot select a particular report to be imported into Unifier.
- If you have imported a report to Unifier and the report no longer exists in the Oracle Analytics Server, when you select Synchronize External Reports, the status of the report is "Invalid" and you cannot see the report at runtime.
- If you change the name of a report in Oracle Analytics Server, the system treats the report as a new report after synchronization.
 - The system sets the original report, in Unifier, as "Invalid" and you cannot see the report at runtime.
- If you change the location of a report in Oracle Analytics Server, the system treats the report as a new report, after synchronization.
 - The Synchronize External Reports window displays the report and the report new location, after import.
 - The system sets the original report, in Unifier, as "Invalid" and you cannot see the report at runtime.
- If multiple reports, with same names exist in Oracle Analytics Server, after synchronization, all reports will be imported into Unifier.
- After the reports are synchronized, the system updates the descriptions of the reports. There will be a small delay for this operation.
- If the report parameter (external reports) starts with "uuu_hidden_", it will not be available for the user to edit in Unifier.

Synchronize External Reports window (On-Premises and ST Only)

- The Report Name is a read-only field and lists the names in alphabetical order.
- The Location is a read-only field and lists the location of the report in the Oracle Analytics Server.
- The Report Level displays Project. You can also select the Synchronized External Reports option and set the Report Level in the Edit Report Level window.
- The Description field provides a description for the Oracle Analytics Server Report on the Oracle Analytics Server.

Oracle Analytics Server Report Level

The Oracle Analytics Server report operates at the project level, meaning it runs within the context of a specific project or shell.

Ensure that the following predefined Unifier parameter is included in the "Where" clause of the query for the Data Set associated with the Main view: :uuu_p_context_project_id

For example, you can use the parameter in the "Where" clause as follows: project_id = nvl(:uuu_p_context_project_id,project_id)

Sample XML Data for Custom Templates (Custom Prints and Reports)

In case of a Custom Print, the sample data contains data elements that will be used in the layout files to capture information about a business process (BP).

Some data elements are specific to the business process selected as they map to the standard and custom elements included in the BP forms.

If you have an image picker Data Element (DE) on your BP form, the sample data includes the XML element, which provides the data for the ID that corresponds to the image as well as the name of the image.

Example

If the image picker DE "AE_Image" is placed on the BP form, the generated data XML will have the "AE_Image" DE, which provides value for the uploaded image name, and the "k__AE_Image" DE, which provides value for the uploaded image ID.

You must use the image ID in the Oracle Analytics Server template for the custom print of the BP.

There are some data elements present in the sample data for all the BPs because they apply to all. These data elements provide information such as record attachments, attachment comments, line item attachments, workflow steps, and so forth.

Note

- In the Internal Multiple Data Model Type, the top-level data set is the `project_company_info`. This must be the first grouping because the Internal Multiple Custom Print template can be selected for multiple business process records from the Tasks log, Business Processes log, or Master log. These pages display business process records from multiple shells that the user has access to (permission). This data set has fields providing information of the company and project with which the BP record is associated.
- All other data sets are children to this data set.
- If the Data Model includes multiple levels, you must add each level to the path; for example, use: `./<level1>/<level2>.../<PROJECTIMAGE>`
- Each XML Data Element Group represents a unique data set in the data model uploaded to the Oracle Analytics Server and has a field that its value uniquely represents the record.
- The unique field in each data set is the field to be used as a group-by field on the template for rendering the data grouped under the BP record.
- The unique fields are important to the template designers because of the layout and the data that needs to be displayed on the Oracle Analytics Server Custom Print output.
- The unique field in each data set can be suffixed by a number. This applies to other data sets as well as a similar field.
- The number suffix is added automatically to maintain the uniqueness of the field across the data sets. This is used by the Oracle Analytics Server for the correct grouping of the data. For example, for multiple ID fields in different data sets, the ID field appears as: `<ID_3></ID_3>`.

The following is a list of data elements and their descriptions:

`<li_attachments>`

- Unique Field: `<ID_<no>>>..</ID_<no>>>`
- The sub-elements under this provide information about line item attachments for the business process when the business process has line items.

`<lic_attachments>`

- Unique Field: `<ID_<no>>>..</ID_<no>>>`
- The element is a child of `<la_comments>` and its sub-elements provide information about attachments linked to the comment of line-item attachment.

`<li_ca>`

- Unique Field: `<ID_<no>>>..</ID_<no>>>`
- The element is a sub-element that provides information about cost allocation line item element for Summary Payment Application of SOV type BP.

`<la_comments>`

- Unique Field: `<COMMENT_ID_<no>>>..<COMMENT_ID_<no>>>`
- This element is a child of `<li_attachments>` and its sub-elements provide information on the comments associated with the line-item attachment.

<standard_elements>

- This is applicable to Custom Print of Data Model Type Internal.
- The sub-elements of this group element provide information about company name, project name, project number, and so on.

<general_comments>

- Unique Field: <. Unique Field: <COMMENT_ID_<<no>>>..<COMMENT_ID_<<no>>>
- The sub-elements of this group element provide information about general comments on the business process.

<gc_attachments>

The element is a child of <general_comments> and its sub-elements provide information about attachments linked to the general comment.

<record_attachments>

- Unique Field: <ID_<<no>>>..</ID_<<no>>>
- The sub-elements under this provide information about record attachments for the business process.

<ra_comments>

- Unique Field: <COMMENT_ID_<<no>>>..<COMMENT_ID_<<no>>>
- This element is a child of <record_attachments> and its sub-elements provide information on the comments associated with the record attachments.

<rac_attachments>

- Unique Field: <ID_<<no>>>..</ID_<<no>>>
- The element is a child of <ra_comments> and its sub-elements provide information about attachments linked to the comment of record attachment.

For workflow business processes, there are additional elements that provide information about the workflow process and its details. The following is a list of data elements:

Unique Field: <ID_<<no>>>..</ID_<<no>>>

<workflow_steps>

- <WF_PROCESS_ID></WF_PROCESS_ID> Process Id
- <SOURCE_ID_1></SOURCE_ID_1> BP record Id
- The sub-element of this element provides information about the workflow steps associated with the business process. Details like step name, step assignees

<task_assignees>

- <WFTEMPLATE_ID></WFTEMPLATE_ID>
- <OracleAnalyticsServer_SOURCE_ID></OracleAnalyticsServer_SOURCE_ID>
- <OracleAnalyticsServer_WF_PROCESS_ID></OracleAnalyticsServer_WF_PROCESS_ID>
- The sub-element of this element provides information about task and assignee details. Information like Task name, Task Status, Assigned From, Assigned To and more

<workflow_progress>

- `<WF_PROCESS_ID></WF_PROCESS_ID>` Process Id
 - `<SOURCE_ID_1></SOURCE_ID_1>`
 - The sub-elements of this element provide information about status of the workflow.
- `<group_assignment_notes>`
- `<PROCESS_ID></PROCESS_ID>`
 - `<STEP_ID></STEP_ID>`
 - The sub-elements of this element provide information about the notes sent when a task is assigned to the group in the workflow process.

Creating Oracle Analytics Server Custom Print

To create an Oracle Analytics Server *custom print* configuration in Unifier:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Custom Templates**.
3. In the **Custom Templates - Current View: All** log, select **New**.
4. Select one of the following options to open the Custom Print window:
 - **Custom Print with Internal Data Model**
 - **Custom Print with External Data Model**

Note

To view an Oracle Analytics Server *custom print* template, select the template, and select **Open**.

For more information, see [Custom Templates \(Custom Prints and Reports\) Overview](#).

Custom Print Window (General tab)

In the **General** tab, you can define the general *custom print* information.

1. Enter and select values in the following fields:

Note

Required fields are marked with an asterisk (*), or a star.

- **Name**
Enter a unique name for the *custom print*, up to 50 characters (use alphanumeric characters, non-ASCII characters, or spaces).
- **Description**
(Optional) Enter a brief description about the *custom print* up to 250 characters (use non-ASCII characters).
- **Data Source**

Select one of the values from the drop-down list. The list contains all the design objects that support *custom print*, such as BP names, Space attribute names, CM attribute names, and so on.

- **Data Model Type**

This is pre-populated read-only field, based on the selected *custom print* type. The values, based on the option selected at the time of creating the *custom print*, can be one of the following:

Internal

External

Internal Multiple

External Multiple

Internal or External

2. Select **Apply** to continue.

When you select **Apply**, the system processes the information that you have provided and prepares the custom print for publication. As a result of this process, two additional tabs are added to the *Custom Print* window that require your input:

- Template File tab

The Template File tab lets you upload:

- Multiple templates for the *custom print* (RTF, PDF, Excel, eText)
- Data model (.XDM) file (for print with external data model)

- Sample Data tab

The Sample Data tab lets you generate the sample XML, which you can use to create layouts for the *custom print*. In the case of an external data model-based report, the report must have been published to the Oracle Analytics Server at least once before the sample XML data can be generated.

See the following topics for details:

- [Custom Print Window \(Template File tab\)](#)
- [Custom Print Window \(Sample Data tab\)](#)

Custom Print Window (Template File tab)

The **Template File** tab contains information about the print layout, along with the corresponding templates and XLIFF translations.

You can build a Rich Text Format (RTF) print template and upload the template to your Custom Print in the system.

To create a simple RTF template:

1. Open Microsoft **Word**.

The application must have the Microsoft Word Oracle Analytics Publisher plug-in installed. See [Download and Install Oracle Analytics Publisher Desktop for Microsoft Office](#).

2. Select the **Word Oracle Analytics Publisher** ribbon.

3. Select **Sample XML** to import your sample data and wait until the data is loaded successfully.

You can use the following option for each template:

- Add
- Modify
- Remove
- Download

Add

Use **Add** to upload the print layout and the translated XLIFF files. The XLIFF files are used for translation purposes. When you select Add, the "Add template and Files" window opens.

The "Add template and Files" window has two sections:

- Template
- Translated XLIFF files for the Template

Note

Required fields are marked with an asterisk (*), or a star.

Template

The Template section contains the following fields:

- **Template Name:** Enter a unique name for the template (use non-ASCII characters).
- **Template Type:** From the drop-down list, select a template type: RTF, PDF, Excel, or eText.

A Template Type can be changed if the template is in Creation stage. After it is created, the Template Type cannot be modified, and the custom print designer must create a template (of the desired type) and remove the one that is no longer required.

- **Layout File:** Browse to find and upload the layout files, based on the template type.

Translated XLIFF files for the Template

If you want to internationalize the product, the translated XLIFF files can be uploaded, for the corresponding languages, in the Translated XLIFF filed for template section.

Note

The languages listed are the active languages selected by the administrator in the **Configuration - Internationalization** log.

Select **Apply** when finished.

When you open an existing Custom Print, the Template File tab lists all available templates. The first template is always marked as Default, but you can change the default template.

Modify

Use Modify to modify the existing print template and XLIFF files. You must select an existing file before you can proceed. When you select Modify, the "Modify Template and Files" window opens.

The "Modify Template and Files" window has two sections:

- Template
- Translated XLIFF files for the Template

Note

Required fields are marked with an asterisk (*), or a star.

Template

The Template section contains the following fields:

- **Template Name:** The unique name for the template.
- **Template Type:** This is pre-populated read-only field, based on the selected Template Type.

A Template Type can be changed if the template is in Creation stage. After it is created, the Template Type cannot be modified, and the custom print designer must create a template (of the desired type) and remove the one that is no longer required.

- **Layout File:** Browse to find and upload the layout files, based on the template type. The original custom print file is displayed.

Note

- You can modify an Oracle Analytics Server Custom Print template only if the status is set as "Draft."
- You cannot modify a Data Source of a Custom Print template after the Custom Print template has been created.
- You can modify the contents of the Description field at any time.

Translated XLIFF files for the Template

If you want to internationalize the product, the translated XLIFF files can be uploaded, for the corresponding languages, in the Translated XLIFF filed for template section.

Select **Apply** when finished.

Remove

To remove a Custom Print template, select the template, and select **Remove**.

Note

To delete a Custom Print template, you can select the Custom Print template from the log and select Delete. You can delete a Custom Print template regardless of the Custom Print template status.

Download

The Download option lets you download the template and the corresponding translated XLIFF files. You must select an existing file before you can proceed.

When you select Download, a zip file is generated. The zip file name format must be:

Template_<Numeric part of report key>_<File Type>.zip

Example

Template_483_PDF.zip

You can copy a Custom Print template to use as a base for a new Custom Print template.

 Note

After copying a Custom Print template, the term, "Copy of" appears at the beginning of the name of the new Custom Print template.

Custom Print Window (Sample Data tab)

You can use the Custom Print window Sample Data tab to download sample data for designing the custom print template file. You can use the XML data to design the print template file in the Oracle Analytics Server.

The XML tags in the sample data are displayed for all the fields that are relevant to the selected data source. The XML tags are grouped according to the XML elements or data sets. The data sets displayed in the Sample Data tab are driven by the data source type. For a Workflow BP, the various elements are the upper forms, line items, workflow details, comments, and so forth.

1. In the Sample Data tab, select **Generate**.
2. When finished, select **Download**.
3. Select **Apply**.
4. Select **OK**.

Creating Custom Email Template

To be able to create (or add) a custom email template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. In the **Configuration - Business Processes** log, select your Workflow BP, and select **Open**.
4. In the left Navigator, select **Customize Email**, and then select **Content** to open the **Email Content** log.
5. Select **Create** to open the **Create Template** window.
6. Select your language and enter a name for the template in the **Name** field.
7. Compose your email body text, and, if applicable, double-click the necessary data elements, from the right pane (**Available Data Elements**), to include them in your email. You must manually enter the title of the DE. Use the elements of rich text editor in the body to create a custom email format. The list of DEs can be broadly categorized as:

- Workspace and Workflow Information (Shell details, Workflow information, and Task assignee details)
- Upper form details

See the **List of DEs and Categories** table below for details.

If the DE value is not present a blank value will be updated in the email content.

Use the **Find on Page** option to search for a particular DE.

The active languages appear in separate tabs, according to their order in the language log.

Select one of the following options, when finished:

- **Save:** To save your modified email in the log and keep the **Email Content** log open to conduct other operations.
- **Save and Close:** To save your modified email in the log and close the **Email Content** log.
- Use the **Cancel** option to discard your changes, if any, and return to the **Email Content** log.

To be able to modify a custom email template, follow the steps above to access the **Email Content** log, and then open the email that you want to modify and incorporate your changes. If there are several email templates in the **Email Content** log, you can use the **Find on Page** option to search and find the email template that you need.

Within the **Email Content** log, in the upper-right corner, the system displays the value of the maximum size of the outgoing email.

 Note

Ensure that you keep the size of your emails <20% of the maximum size of the outgoing email.

The **Email Content** log displays the size of the email configured under each language on the right side of the window.

The custom email template will be available at the company-level (or global-level) when the Business Process Setup is made available at a shell-level template, similar to the setup of the custom email subject line. After the Business Process Setup, at the shell-level template, is complete, the email content template will become available in the **Notifications** tab of the Business Process Setup. When a task is created during the run-time, for a BP, the email generation appears per the custom format that was defined at the customize email content node, provided that the format is selected as default format. Email templates for multiple languages can be created in the same window.

If the size of the configured email template, for any language, exceeds the maximum set limit, or if the size falls between preferred size-range, an error or a warning message will be displayed respectively.

If you modify a template name and the email is already in use, the system changes the email name at the selection (access information by going to BP Setup, selecting the **Notification** tab, and then selecting any particular task type).

After you save a custom email, the system displays the record with log containing the following fields:

- **Name:** Name or title of the template.
- **Last Modified By:** Name of the user who last modified the template.

- **Last Modified:** Date when the template was last modified.
- **Active Languages:** Listed according to the order of the language log. If custom email content for any language type is defined, the size of the email configured under each language is displayed in the log.

List of DEs and Categories

DE Category	Values
Task assignee	Sent From/Task From Sent To Task To (All assigned users in the To step of the task) Task CC (Where all CC users are fetched from the task assigned) Task Status Task Due Date
Workflow setup	Workflow Step Name Workflow Email Content
Shell	Shell Name Shell Number Administrator Hierarchy Path Environment Name

Additional Information

The general comments (any comments that have been added as a part of the record modification) are sent out as a part of the system default footer, for the email.

Also, the line items and attachments that have been added to a record will be included through a system-generated footer for the record modification emails. The following DEs are not included:

- <SOURCE_ID></SOURCE_ID>
- <STEP_ASSIGNEE></STEP_ASSIGNEE>
- <ASSIGNEE_COMPANY></ASSIGNEE_COMPANY>
- <STEP_STATUS></STEP_STATUS>
- <STEP_ACTION></STEP_ACTION>
- <STEP_COMPLETION_DATE></STEP_COMPLETION_DATE>
- <WORKFLOW_STATUS></WORKFLOW_STATUS>
- <WFTEMPLATE_ID></WFTEMPLATE_ID>
- <PROCESS_ID></PROCESS_ID>
- <TASK_NAME></TASK_NAME>
- <ACTION_NAME></ACTION_NAME>
- <ASSIGNED_FROM></ASSIGNED_FROM>
- <ASSIGNEE_COMPANY_1></ASSIGNEE_COMPANY_1>
- <TASK_COMPLETION_DATE></TASK_COMPLETION_DATE>
- <ASSIGNEE_ID></ASSIGNEE_ID>

- <TASK_NOTE></TASK_NOTE>
- <SUBWORKFLOW_NAME></SUBWORKFLOW_NAME>
- <SUBWORKFLOW_DUEDATE></SUBWORKFLOW_DUEDATE>
- <TASKNODEID></TASKNODEID>
- <ACT_STEPTEMP_ID></ACT_STEPTEMP_ID>

When you select **Create**, the system opens the first language tab, as listed in the language log. You can select any of the languages tabs and paste the content to be translated. You can also save an email format in multiple languages. At run-time, the custom email is drafted for the selected language, and if the custom email content is not present for the language, the system uses the system default format.

The user can select any of the created records and select **Delete** to delete the selected custom email format. If a selection includes a template which is being used, the system will display a confirmation message. The user can delete multiple templates at once. After a template is selected for deletion, the system automatically reverts the selected template to the system default.

The header and footer section of the custom email is autogenerated by the system and appended to the created custom email.

Use the Additional Information field that is available as one of the DEs like a note. The Additional Information field is configured at the email content section of the BP Setup.

You (the admin) can select the customized email format under the **Notification** tab of a BP Setup. Go to **Notification** tab, under **Custom Notifications** subsection, select the drop-down option for each email type, and select the desired format. The name of the custom template defined is listed in the drop-down list.

If the user selects "Include both record and line item attachments" or "Include record information as attachment," the attachments will be sent as part of custom email.

The drop-down lists all the custom email formats defined at the customize mail Content node. The same format can be selected for all the task types. After it is selected, the user can select **OK** or **Apply** to save the changes. The selected format email is triggered when the user:

- Creates BP log, by way of create.
- Creates Project Tasks log, by way of create BP.
- Goes to the Home Tasks log, by way of create BP, in Project.
- Goes to the Document Manager, by way of create BP with attachment.
- Goes to the Query Based Tabs, by way of create.
- Initiates auto create.
- Wants to use the email for CSV uploads.
- Creates a task, by way of the Unifier Mobile App.

The subject line for email is either a system-default text, or a customized one which is defined under the **Customize Subject Line** node. You can also add data elements to the subject line of an email template. Do not modify the text of data element in the subject line after it has been added.

You (the admin) must assign the right user at each and every step of the workflow, to indicate the recipient of the notifications.

When the user has selected custom email for a particular task and the system does not generate a custom email (due to errors), the system sends a default email, automatically.

DEs of type Rich text are not available to be added in the email subject line configuration, or to be added to the custom email content.

Publishing Oracle Analytics Server Custom Print

You must publish the Oracle Analytics Server Custom Prints in the Oracle Analytics Server.

To publish a Custom Print:

1. Prepare the custom print.
2. Select **Status**.
The status of an Oracle Analytics Server Custom Print template is either set as Draft, or the status is set as Published. For either case, to print the Custom Print template, you must select Publish.

You can delete a Custom Print template regardless of the Custom Print template status.

3. Select **Publish**.
After you publish, the system performs validation and if there are no errors the system publishes the Custom Print template and assigns the new Published Date in the log.

Note

- If you remove the data elements from the design of the data source that has been used in the Oracle Analytics Server Custom Print template, you must republish the Custom Print template to the Oracle Analytics Server.
- If you add new data elements to the upper form, or detail form, of the BP Design, you must re-publish the Custom Print template and download a new copy of data schema to be able to see and use these new elements (of data schema) in the template.
- You can update the Custom Print template layout by regenerating the sample data.
- When the status of a Custom Print changes from "Draft" to "Published," the system generates the data model with respect to the current BP Design. As a result, if the BP design has changed between the time of first download of the Sample Data and the publishing of the Custom Print, the developed report Template must be tested again with the new Data XML.

Parameters for External Multiple Custom Print

The following is a list of parameters for the External Multiple type custom print that you must use in the data model to ensure that the **Bulk Action** (in Tasks and Business Processes logs) works properly:

Parameter Name	Description	Required	Comma-Separated Values
uuu_p_project_id	Contains the value of the Project IDs.	Yes	Yes
uuu_p_context_company_id	Contains the value of the customer's Company ID.	Yes	No

Parameter Name	Description	Required	Comma-Separated Values
uuu_p_process_id	Contains the value of the Workflow Process IDs.	Yes Only for Workflow type business processes.	Yes
uuu_p_source_id	Contains the value of the Record IDs.	Yes	Yes
uuu_p_space_source_id	Contains the value of the space Record ID.	Yes Only for Space type business processes.	Yes
uuu_p_object_type	Contains the value of the business process ID in uDesigner.	Yes	No
uuu_p_userId	The user ID of the user.	No	No
uuu_p_userCompanyId	The user's company ID.	No	No

Creating Oracle Analytics Server Custom Report

To create an Oracle Analytics Server *custom report* configuration in Unifier:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Custom Templates**.
3. In the **Custom Templates - Current View: All** log, select **New**.
4. Select one of the following options to open the Custom Report window:
 - **Report with Internal Data Model**
 - **Report with External Data Model**

For details, see [Custom Templates \(Custom Prints and Reports\) Overview](#).

Note

Oracle only supports the delivery of Oracle Analytics Server reports from P6 in PDF format by way of email.

Custom Report Window (General tab)

In the **General** tab, you can define the general custom report information.

1. Enter and select values in the following fields:

Note

Required fields are marked with an asterisk (*), or a star.

- **Name:** Enter a unique name for the custom report, up to 50 characters (use alphanumeric characters or spaces).
- **Description:** (Optional) Enter a brief description about the custom report.
- **Data Model Type:** This is pre-populated read-only field, based on the selected custom report type. The values can either be Internal or External, based on the option selected at the time of creating the custom report.
- **Report Level:** Set to Project by default.
- **Main View:** A drop-down list that lets you select a data view to use as the main view of the custom report. The items in the drop-down list are populated with the data views that have been published.

Note

When you are selecting a Main View, ensure that you select a view that has the level-appropriate ID, as a column, in the view definition. For example, if you are selecting a Main View for a Project (report level), the view must have "project_id", as a column, in the view definition.

2. Select **Apply** to continue.

When you select Apply, the system processes the information that you have provided and prepares the custom report for publication. As a result of this process, two additional tabs are added to the Custom Report window that require your input:

- **Template File tab**
The Template File tab lets you upload:
 - Multiple templates for the custom report (RTF, PDF, Excel, eText)
 - Data model (.XDM) file (for report with external data model)
- **Sample Data tab**
The Sample Data tab lets you generate the sample XML data which you can use to create layouts for the *custom report*.

See the following topics for details:

- [Custom Print Window \(Template File tab\)](#)
- [Custom Report Window \(Sample Data tab\)](#)

Custom Report Window (Views tab)

On the Views tab, you can:

- Set the views used as data sets (Views used as data sets)
- Determine data links (Data links)

To set additional views for use as data sets:

1. On the Custom Reports window, select the **Views** tab.
2. In the "Views used as data sets" section, select **Add** to add a new row to the Views list.
3. In the "View Name" column, from the drop-down list, select a view. The drop-down list displays the available *published* data views.

4. In the "View Type" column, double-click the entry to make the cell editable, and select a view type from the drop-down list. You can only select one view as the main view. The other views are sub-report views.
5. In the "Data Set Name" column, double-click the cell to make it editable, and enter the name of the data set to which this view should belong.
6. In the "Data Set" Tag column, double-click the cell to make it editable, and enter the tag for the data set.
7. To add another view, repeat steps 1 to 6.

You can enter any number of data views for a custom report and group them into data sets.

After you have specified the data views and grouped them into data sets, you can link one data set to another to extract related information from multiple sources.

For translation-related information about Oracle Analytics Server Reports, see [Internationalization \(Oracle Analytics Server Custom Reports\)](#).

Note

For External Data Model based reports, you cannot add or remove views.

You can create only one link level; that is, you can create one "sub-link." You cannot create another link under a sub-link.

To determine data links:

1. In the Data links section of the window, select **Add** to open the Add Link window.
2. In the Source Data Set field, select the name of the data set you want to link to another set. The selection list shows the data sets you created in the upper section of the Views tab.
3. In the Source Element Name field, select the name of the field on the source data set that you want to map to the target data set.
The element data type must match the data type of the target element; for example, you must match an integer to an integer, a string to a string.
4. In the Target Data Set field, select the name of the data set the source data set should link to.
5. In the Target Element field, select the name of the field on the target set that the source element field should map to.
6. To add another link, select **Add**, and repeat steps 2 to 5, or select **OK** to save the links the exit the Add Link window.
7. Select **Apply**, and select **OK** to exit the Custom Report window.

Example for creating a data link:

Row	View Name	View Type	Data Set Name	Data Set Tag
0	Invoices	Main View	inv	inv
1	InvoicesLI	Sub Report View	LineItem	LineItem

At this point, set the relationship between the Main View and the Sub Report View that you have added.

1. Go to the **Data Links** section, and select **Add**.
2. Link the ID field from the Invoices Data View to the RECORD_ID field from the Invoices Line Item Data View.
Example
Source Data Set: inv
Source Element Name: INV_ID
Target Data Set: LineItem
Target Element: INV_LI_RECORD_NO
3. Select **OK** to add to add the link.
4. Select **Apply**.

Custom Report Window (Query tab)

When creating, you can specify two types of parameters before running a report:

- **Search Parameters**
Use these to filter the SQL results. Data View result rows that do not match the filter will not be sent from Unifier to Oracle Analytics Server.
- **Additional Parameters**
Use these to pass additional parameters for Oracle Analytics Server to consume at runtime. All values are sent from Unifier to Oracle Analytics Server for further operation. For more information, see [Custom Report Window \(Parameters tab\)](#).

Search Parameters

Search parameters allow the report runner to filter the data that gets sent to Oracle Analytics Server. For example, a Contract Report may need to be filtered by Vendor or Contract Type. A Ball-in-court report may be filtered for a specific task assignee, or task type.

At runtime, the report runner can select or multi-select from a list of values based on the search parameters specified in the report configuration. This means that Unifier basically runs the Data View before the report is run to give the report runner a list of the SQL results. He or she can then select or multi-select values from this initial run to filter what will appear in the report output.

On this tab, you can add query parameters to the configuration. The query parameters are created on the columns of the main view, selected for the Custom Report. At runtime, these parameters appear in the Search Parameters block.

To add query parameters to the custom report:

1. On the Custom Reports window, select the **Query** tab.
2. Select **Add**. The Add Query window opens. Complete the window:
 - **Element Name:** Select the drop-down list and choose from the elements (all columns from the main view).
 - **Label:** Enter a label to use for the Element Name. This label appears to the user at runtime.
 - **Operator:** Select the appropriate operator to use for the query. The operators will depend on the data type of the element chosen.
 - **Source Type:** This is the source of the value. Choose one of the following:

- **Data Definition:** Lets you choose a data definition. The following field becomes available:
 - **Select Definition:** Select from the drop-down list. The list displays data definitions defined in the company that apply to the type of element chosen. (For example, if you choose a drop-down [pull-down] or radio button, the data set values defined for the data definition will be displayed to the user at runtime.) This lets you use existing data definition values, rather than entering them manually (see Ad Hoc below).
 - **View:** Lets you compare columns in your current view against another view chosen here. The following fields become available:
 - * **Select View:** Lists all published data views. Choose the view to compare.
 - * **Value Column:** Lists the columns for view chosen in Select View. This is the column that will be compared.
 - * **Label Column:** What you choose here will be displayed to the user at runtime.
 - * **Context Sensitive:** If this checkbox is selected, the results will automatically apply the filter for project_id at runtime (results will be for the current project only).
 - **Ad Hoc:** Allows user to select values in User mode from selection list. If you choose this option, you must specify the list of values here. This is similar to defining a data definition data set.
 - * Select **Add**. The Ad Hoc window opens.
 - * Select **Add**. A new row is added.
 - * Enter a **Value** and **Label**.
3. You can modify the query parameters by doing the following:
 - Delete a row by selecting it and selecting **Remove**.
 - Modify parameter by selecting a row and selecting **Modify**.
 - Change the order of the query parameters (as they appear in User mode), by selecting a row and selecting **Move Up** or **Move Down**.
 4. When done, select **Apply** to save changes. You can select **OK** to save and exit, or select another tab to continue to define the configuration.

Custom Report Window (Parameters tab)

If the report designer has defined a formula using parameters with the same name that was used in the **Parameters** tab, it will display on the report at runtime. These parameters appear in the **Additional Parameters** block in the **User** mode.

Additional Parameters

Additional parameters allow the report runner to specify parameters that can be used at report runtime to alter how the data is displayed.

Unlike search parameters,

- Additional parameters only support entering text. You cannot select or multi-select values from Unifier.
- Additional parameters allow us to specify a default value so that the user only needs to change the value if needed.

A good example of where to use additional parameters is for calculations, for example, when you enter a target future exchange rate. You can also use additional parameters for conditional highlighting so that only rows over/under a certain value are highlighted.

Note

In the **Conditional Formatting** section, you must hard-code a value (for example, 10,000).

To add additional parameters to the custom report:

1. On the **Custom Reports** window, select the **Parameters** tab.
2. Select **Add** to add a new row. Enter the following information to specify the behavior of the parameter in **User** mode:
 - **Editable:** Select this checkbox to indicate if the parameter will be editable in **User** mode; otherwise the parameter is read-only.
 - **Hidden:** Select this checkbox to hide the parameter in **User** mode. Depending on the design, the report may still use the parameter at runtime.
 - **Name:** Double-click to edit the name. The name must match the parameter name used in the Oracle Analytics Server report. The behavior and default values for the parameters specified here can be applied automatically to the report at runtime.
 - **Label:** Specify the label of the parameter in **User** mode.
 - **Default:** The default value of the parameter in **User** mode.
3. Perform any of the following actions:
 - Select **Remove** to delete a selected row.
 - Select **Apply** to save changes.
 - Select **OK** to save and exit.
 - Select another tab to continue defining the configuration.

Predefined Oracle Analytics Server Parameter Examples

The name for a parameter is mapped to an Oracle Analytics Server parameter in the format: :uuu_p_{Parameter Name}

Note

Ensure the length of {Parameter Name} does not exceed 24 characters.

Any parameters created in the **Parameters** tab also need to be appropriately added into the Parameters tag in the .XDM file.

Predefined Unifier Parameters

Predefined parameters are reserved for Unifier to pass the runtime values to Oracle Analytics Server runtime context.

Here is example from a XDM file.

```
<parameters xmlns="http://xmlns.oracle.com/oxp/xmlp">
```

```
...  
  
<parameter name="uuu_p_context_project_id" dataType="xsd:string"  
rowPlacement="7">  
  
<input label="context project id" size="10"/>  
  
</parameter>  
  
<parameter name="uuu_p_reportByF" dataType="xsd:string" rowPlacement="9">  
  
<input label="uuu_p_reportByF" size="20"/>  
  
</parameter>  
  
<parameter name="uuu_p_timeZoneF" dataType="xsd:string" rowPlacement="10">  
  
<input label="uuu_p_timeZoneF" size="20"/>  
  
</parameter>  
  
<parameter name="uuu_p_diffMinutesF" defaultValue="0" dataType="xsd:string"  
rowPlacement="11">  
  
<input label="uuu_p_diffMinutesF" size="20"/>  
  
</parameter>  
  
<parameter name="uuu_p_sysyTimeZoneID" dataType="xsd:string" rowPlacement="12">  
  
<input label="uuu_p_sysyTimeZoneID" size="20"/>  
  
</parameter>  
  
<parameter name="uuu_p_searchConditionF" dataType="xsd:string" rowPlacement="13">  
  
<input label="uuu_p_searchConditionF" size="50"/>  
  
</parameter>  
  
<parameter name="uuu_p_urlF" dataType="xsd:string" rowPlacement="14">  
  
<input label="uuu_p_urlF" size="40"/>  
  
</parameter>  
  
<parameter name="uuu_p_sessionIdF" dataType="xsd:string" rowPlacement="15">  
  
<input label="uuu_p_sessionIdF" size="50"/>  
  
</parameter>  
  
<parameter name="uuu_p_companyRegistryF" dataType="xsd:string" rowPlacement="16">  
  
<input label="uuu_p_companyRegistryF" size="50"/>  
  
</parameter>  
  
</parameter>  
  
<parameter name="uuu_p_userId" dataType="xsd:string" rowPlacement="17">  
  
<input label="uuu_p_userId" size="50"/>  
  
</parameter>
```



```
<parameter name="uuu_p_userCompanyId" dataType="xsd:string" rowPlacement="18">
<input label="uuu_p_userCompanyId" size="50"/>
</parameter>
```

① Note

uuu_p_userIduuu_p_userCompanyId

The following is an example for how to use the predefined Oracle Analytics Server Parameters to display an image in the Report layout:

1. Create Form fields in the .rtf.
2. In the HelpText of the form field, define variable matching the parameter names used in the image URL.
3. Right-click the dummy image, select **Size**, and provide the following value in the **Description** field of the AltText information for the image:

url:

```
{concat($uuu_p_urlF, 'companyRegistry=', $uuu_p_companyRegistryF, '&sessionId=', $uuu_p_sessionIdF, '&id=', <PROJECTIMAGE>)}}
```

① Note

- The uuu_p_* are the predefined parameters in the data model. They are also the variable names defined in the RTF form fields. The **<PROJECTIMAGE>** is the element for image file ID from Unifier.
- In the Description, you can access the image by entering the complete path to the image or by using `./` to look for the image in the Data Model.

In the HelpText of the form field enter:

```
<?variable@begin:uuu_p_urlF;(./uuu_p_urlF)[1]?>
```

Custom Report Window (Template File tab)

The **Template File** tab lets you upload:

- Multiple templates for the custom report (RTF, PDF, Excel, eText).
- Data model (.XDM) file (for report with external data model)
- XLIFF translation files

Use this tab to add, modify, remove, or download files, and select **Apply** when finished.

You can build a Rich Text Format (RTF) report template and upload the template to your Custom Report in Unifier.

To create a simple RTF template:

1. Open Microsoft **Word**.

The application must have the Microsoft Word Oracle Analytics Publisher plug-in installed. See [Download and Install Oracle Analytics Publisher Desktop for Microsoft Office](#).

2. Select the **Word Oracle Analytics Publisher** ribbon.
3. Select **Sample XML** to import your sample data and wait until the data is loaded successfully.

Note

You may need to complete the **General** tab first and select **Apply** before this tab appears.

Custom Report Window (Sample Data tab)

The Sample Data tab lets you generate the sample XML data, which you can use to create layouts for the custom report. In the case of an external data model-based report, the report must have been published to the Oracle Analytics Server at least once before the sample XML data can be generated.

Note

Depending on the Report Level that you have selected in the General tab, the fields and selections in this tab change.

1. In the Sample Data tab select a sample, determine the number of rows that you want to see, and select **Generate**.
2. When finished, select **Download**.
3. Select **Apply**.
4. Select **OK**.

Download and Install Oracle Analytics Publisher Desktop for Microsoft Office

To download and install Oracle Analytics Publisher desktop for Microsoft Office:

1. Download **Oracle Analytics Publisher Desktop for Microsoft Office** from: <https://www.oracle.com/middleware/technologies/analytics-publisher/downloads.html>
Ensure that you choose the Oracle Analytics Publisher Desktop version (32-bit vs. 64-bit) based on your version of Microsoft Office 32-bit or 64-bit.

Note

If your Microsoft Word executable is found at C:\Program Files (x86)\Microsoft Office\Office12\WINWORD.EXE, you have the 32-bit version).

2. Run the installer.
No additional setup is required after running the installer. To ensure that the installation was successful, check to see that the plug-in has been added to your Microsoft Word user interface. The Oracle Analytics Publisher ribbon appears after launching Microsoft Word.

(Optional) SQL Text Editor

When you start to write more complex reports, having a text editor that highlights SQL keywords can make a significant difference. For your needs, a simple editor such as Notepad++ would suffice. Ensure that you set the Language to SQL. You can copy the queries developed through the text editor and paste them into the Data View window.

(Optional) SQL Developer

You can download Oracle SQL Developer from: <http://www.oracle.com/technetwork/developer-tools/sql-developer/downloads/index.html>

1. Download the first option in the list: Windows 64-bit - zip file includes the JDK 7
2. Extract the file onto your computer (for example, C:\Oracle\sqldeveloper\).
3. Run **sqldeveloper.exe**.

Building Report Template (RTF)

You can build a Rich Text Format (RTF) template, upload the template to your Custom Report in Unifier, and generate live reports.

Using Invoice as an example, the following explains how to build a simple RTF template (non-tabular report).

To create a simple RTF template:

1. Open Microsoft **Word**.
The application must have the Microsoft Word Oracle Analytics Publisher plug-in installed. See [Download and Install Oracle Analytics Publisher Desktop for Microsoft Office](#).
2. Select the **Word Oracle Analytics Publisher** ribbon.
3. Select **Sample XML** to import your sample data and wait until the data is loaded successfully.

Note

Alternatively, you can use a template file (for example, A Word template file from your customer).

4. Select **Repeating Group** to generate a loop on each Invoice. The Repeating Group window opens.
5. In the **For Each** field, enter a value in the Data Set Name for each of the Invoices that you chose, when defining your Custom Report (for example, inv). This does not apply to the Invoices Line Items.
6. In the **Group By** field, select a field for your Invoice loop. Use the INV_ID because it is a unique identifier for each Invoice.
7. (Optional) Insert a page break after each Invoice to keep your report formatted.

8. (Optional) Select the Data already sorted option. You can select this option because you have already sorted your data in your SQL statement, using: ORDER BY.
9. Select **OK**.
The Oracle Analytics Publisher plug-in application adds a code to the document which includes: a start (for-each), a page break (page break), and an end (end) for your Invoice loop.
10. Add a blank line after "for-each" operator to make room for your Invoice information.
11. Select the field icon (**ab|Field**) to open the field browser.
The field browser window lets you add fields from your XML sample data file.
12. After each "for-each" operator, double-click **Inv_Record_No** in the field browser.
13. Add a hyphen (-) [n-dash] after the record number.
14. Double-click **Inv_Title** to add the Invoice title.
Example
for-eachINV_RECORD_NO-INV_TITLE

page breakend
15. (Optional) Run the report by selecting PDF on the Word Oracle Analytics Publisher Ribbon (Word will prompt you to save your RTF file if you have not done so).

The first report is now ready.

The report only has the Invoice record number and title for each Invoice in your sample XML (the approved and pending ones because: WHERE inv.STATUS = 'Approved' OR inv.STATUS = 'Pending' in our SQL statement).

You can continue to build on the generated report by adding additional fields from the Upper Form of the Invoices BP, as well as headers, footers, formatting, and so forth.

Creating a Report with Line Items

You can use the Table Wizard to create a report with all the Line Items.

Using Invoice as an example, the following explains how to create a report with Line Items:

1. Add a blank line after for-eachINV_RECORD_NO - INV_TITLE operator and leave your cursor.
2. Select **Table Wizard** on the Oracle Analytics Publisher Ribbon.
3. Select **Table** as your Report Format, and select **Next**.
4. Select **/DATA_DS/Inv/LineItem** as your Data Set (or the name that you had given your Line Item data set).
5. Select the fields that you want to add to the table. Because this is for the Invoice line items, you must only add fields that are specific to the line items.
If you must add a field for "group on" (for example, Inv_Li_Record_No), the grouping process is similar to the process explained in the preceding section. Because you have grouped the records by Invoice in the preceding section, you can leave the value blank.

The order of the selected columns must match the order that you want in your table, except for the column that you use for grouping, which is outside the table. In the "Which fields do you want to show in your report" window, match the order as shown here:

Inv Li Record No --> In Li Record

Inv Li No --> Inv Li No
 Inv Li Desc --> Inv Li Desc
 Inv Li Unit Price --> Inv Li Unit Price
 Inv Li Quality --> Inv Li Quality
 Inv Li Amount --> Inv Li Amount
 Inv Li Uom --> Li Uom
 Code --> CodeInv
 Item --> Item

6. In the "How would you like to group your report" window, leave every option as is because you have already grouped your data by Invoice in the preceding section.
7. In the "Which fields would you like the user to sort the data" window, within each table, sort the lines by `Inv_Li_No` (Invoice Line Item Number). Specify that this is a Number so that it is sorted correctly.
8. Select **Finish**.

The Table Wizard inserts the table and the necessary code:

```
for-eachINV_RECORD_No - INV_TITLE
```

Inv Li No	Inv Li Desc	Code	Item	Inv Li Quantity	Inv Li Uom	Inv Li Unit Price	Inv Li Amount
F INV_LI_NO	INV_LI_DESC	CODE	ITEM	INV_LI_QUANTITY	INV_LI_UOM	INV_LI_UNIT_PRICE	INV_LI_AMOUNT

page breakend

You must run the report to see what information is generated. While the data is correct, you must work on formatting the data. See [Formatting Data](#).

Formatting Data

To format the data generated:

- Provide a descriptive text (not SQL column names) for Column titles.
- Adjust the Column widths.
- Apply general table coloring (borders and shading, font sizes, cell alignment, and so on).
- Ensure that the "dollar" format is used for the two price columns (for example, \$110.00). See the details that follow.
- Add useful information, from the Upper Form of the Invoice, above the table. See the details that follow.
- Provide a "Total" for the amount column. See the details that follow.

When you are finished, generate a PDF and repeat the process if necessary.

To change the formatting of the Price & Amount columns (for example, 110.0 > \$110.00):

1. Double-click **INV_LI_UNIT_PRICE** (the code under the Unit Price field) to launch its Oracle Analytics Server properties.

2. Change the Formatting Type to **Number**.
3. Set the Formatting Format to **\$#,##0.00;(\$#,##0.00)** (paste in the blue text).
4. Repeat the preceding steps for the Amount column.

To add useful information, from the Upper Form of the Invoice, above the table:

① Note

Tables are an efficient formatting tool for organizing data from the Upper Form. Include separate columns for the field name (align right) and the field value (align left). You can also hide the borders if you prefer.

1. Create a 4-row and 2-column table and add field names.
2. Place your cursor where the first inserted field value must be entered.
3. Select the field icon (**ab|Field**) to open the field browser and add fields from your XML sample data.
4. Add useful information such as Creator, Email, and Status (or other fields you added to your SQL statement) above your Line Item Table.
5. Double-click the correct field value from the Field window to add the Title to the report (for example, add Invoice title in the Title field).

To provide a "Total" for the amount column, using Invoice as an example:

1. Right-click somewhere in the last row of your Invoice Line Item table, select **Insert** , and then select **Insert Rows Below**.
2. Highlight all the columns in the new row, except for the last one, and **Merge** the cells (from the right-click menu).
3. Click in the newly created cell and enter: Total
4. Right-align the cell.
5. Place your cursor into your last column of the new row.
6. Select the field icon (**ab|Field**) to open the field browser and add fields from your XML sample data.
7. Select the **Inv_Li_Amount** column to highlight it.
8. Set the calculation (at the bottom) to **Sum**.
9. Select **Insert** to add the calculation into the table.
10. (Optional) Select the Total row and make the text bold.

Adding Summary Page to Report

Your report lists details. The Summary page contains a table with a summary of all the details (for example, Invoices) as well as charts to add graphical information.

To add a summary page to your report, using Invoice as an example:

1. Add Project information.
In preceding sections, you have set your template to loop through each Invoice. To create a summary page, you must include the following information:

- a. Using Word, insert a page break before the "for-each code" at the top of the document. Do not use the page break command in Oracle Analytics Server.
 - b. Add a title to the Summary page (for example, Invoice Report).
 - c. Select the field icon (**ab|Field**) to open the field browser and add information about the project, if you have not done so in your SQL statement.
 - d. Add additional information about the Project below the title (in a table), such as the Project number, Project name, Start/End dates, and Initial/Revised budgets.
 - e. Format dollar values as numbers with the formatting **\$#,##0.00;(\$#,##0.00)**. You can format dates as type Date using date formatting options such as: MM/dd/yyyy
2. Add Summary table.
- A summary table contains the Invoice data that goes in the report. You can use the Table Wizard, similar to the process in the "Creating a Report with Line Items" section.
- a. Place the cursor on a new line under the table on the title page, where you want your table of Invoices to appear.
 - b. Select **Table Wizard** on the Oracle Analytics Publisher Ribbon.
 - c. Select **Table** as your Report Format, and select **Next**.
 - d. Select **/DATA_DS/Inv** as your Data Set (or the name you used in your Invoice data set).
 - e. Select the fields that you want to add to the table. Because this is for the Invoice, you must only add fields that are specific to the Invoices and not the Invoices Line Items. You do not need to group because your SQL statement provides one line per Invoice.
 - f. Sort by Invoice Record Number, in the "Which fields would you like to use to sort the data?" window.
 - g. Select **Finish**. The Table Wizard inserts the table and the necessary code.
 - h. Format the data. See [Formatting Data](#).

Adding a Chart

Using Invoice as an example, you can include a chart in the summary page to demonstrate how the Invoices are split.

There are several chart types available in Oracle Analytics Server. The following is for creating a Pie-chart.

To add a pie chart:

1. Place the cursor above the summary table. The goal is to include the chart between the Project summary table and Invoice summary table because the table can get long and expand to the next page.
2. Select **Chart** on the Word Oracle Analytics Publisher Ribbon.
3. Set the **Chart Type** (on the right) to **Pie Chart**.
4. (Optional) Select one of the Chart Styles.
5. Drag **Inv_Amount** from the Data tree to the Values box to ensure that the size of each pie slice is determined by the dollar amount of the Invoice.
6. Drag **Inv_Title** from the Data tree to the Labels box to ensure that the:
 - Pie slices are determined by Invoice

- Invoice Title appears in the legend
- 7. (Optional) Select **Preview** (upper-right corner) to see a preview of the chart and make changes if necessary.
- 8. (Optional) Use the Properties table on the right side to set Chart Title, Legend properties, and so on.
- 9. Select **OK**. You change the chart settings by double-clicking the chart in the template.
- 10. (Optional) Add spacing between the chart and the two tables and center-align the chart.

Adding Headers and Footers

Use a 3-column table in the header and footer of your template to allow for a uniform adjustment of items such as titles, logos, and page numbers. Use Microsoft Help to learn how to add the first page to your document that does not include Header or Footer.

Adding Images from Unifier

Note

Microsoft Word does not support form fields in the header and footer. If need to add an image to the header or footer of your Custom Report and you want the image to repeat on each page, see [Adding Oracle Analytics Publisher Fields to RTF File Header or Footer](#).

To add an image (examples: Company logo, Shell image, or image picker from a BP record: jpg, gif, or png) from Unifier into your Custom reports, use the Sample XML file (Sample Data) that you have created and exported.

Note

Company logo cannot be displayed in Unifier interface. Create a company-level business process to place your Company logo.

The following shows the procedure by using an example:

1. Open the XML file.
2. On top, identify the XML elements that are blank (shown in **bold** in the following code).


```
<?xml version="1.0" encoding="UTF-8"?>

<DATA_DS>

<uuu_p_reportByF></uuu_p_reportByF>

<uuu_p_timeZoneF></uuu_p_timeZoneF>

<uuu_p_diffMinutesF>0</uuu_p_diffMinutesF>

<uuu_p_sysyTimeZoneID></uuu_p_sysyTimeZoneID>

<uuu_p_searchConditionF></uuu_p_searchConditionF>

<uuu_p_urlF></uuu_p_urlF>

<uuu_p_sessionIdF></uuu_p_sessionIdF>
```



```
<uuu_p_companyRegistryF></uuu_p_companyRegistryF>
<inv>
<PROJECT_ID>1012</PROJECT_ID>
<INV_ID>1</INV_ID>
<INV_RECORD_NO>INV-001</INV_RECORD_NO>
<INV_TITLE>Lumber Contract - Initial Invoice</INV_TITLE>
<INV_STATUS>Approved</INV_STATUS>
```

Note

At runtime, these blank elements are fully populated with information about the server base URL, the User's session ID, and the company registry.

3. Using the included parameters, plus the ID of a specific image (the image that you want), construct a URL of the format:
`<uuu_p_urlF>CompanyRegistry=<uuu_p_companyRegistryF>&sessionId=<uuu_p_sessionIdF>&id=<image_ID>`

Note

To build a similar URL in your Oracle Analytics Server report, ensure that you have the Image ID because the other three parameters have already been identified.

4. Access the Image ID of the image that you want and:

Note

If applicable, you can find the Company logo Image ID in the companylogo column of the table sys_company_info.

- a. JOIN the information into your existing Data Views.
or
- b. Add the information as a new Data View, which you can add as a Sub-Report View to any Custom Report. The SQL to create a Data View:


```
SELECT companylogo
FROM sys_company_info
WHERE companyregistry = 'unifier';
```
5. Define the variables:
 After you have an Image ID, you must define the variables needed to build the image URL by hiding the variables in a Data Field:
 - a. Add a data field somewhere at the top of your report. This can be any field. You only need a placeholder for your variables.
 - b. Double-click the newly added data field, and select the **Advanced** tab. Delete the text in the code box, if any.
 - c. Add the following text into the code box:

```
<?variable@begin:uuu_p_urlF;(.//uuu_p_urlF)[1]?> <?
variable@begin:uuu_p_companyRegistryF;(.//uuu_p_companyRegistryF)[1]?>
<?variable@begin:uuu_p_sessionIdF;(.//uuu_p_sessionIdF)[1]?>
<?variable@begin: image;(/DATA_DS/co/COMPANYLOGO)?>
```

Note

- If you are adding a Shell image or Image Picker Data Element, you do not need that last line. Add the last line only if you have created a Company log Data View (If applicable, you can find the Company logo Image ID in the companylogo column of the table sys_company_info).
- The example code presumes that you added an unlinked Sub Report View with the Data Set Tag "co" (for Company). You can change the Data Set Tag "co" (for Company) to the value that you have in the last column of Company Logo row in the Views used as data sets table on the Views tab of the Custom Report dialog.
- If you want to insert the Project Shell ID, you must access that variable. Depending on where you are in your grouping, the variable can be: <?variable@begin:image;(SHELLIMAGE)[1]?>

To access the Project/Shell Image ID:

1. Go to table: **unifier_shell_info**.
2. Identify the **shellimage** column of the table. The Project/Shell Image ID is in the shellimage column.

You can JOIN this table to your main report view based on the **unifier_shell_info.pid** column, which contains the project ID.

After you defined your variables, you can add an image. The Oracle Analytics Server leverages the Alternative Text of an image to dynamically set the image source. For more information, refer to *Build Reports and Dashboards*, which is available at <https://docs.oracle.com/en/middleware/bi/analytics-server/build-reports-and-dashboards.html>.

To add a dummy image:

1. Create an image (for example, Dummy_Image.jpg), and size it appropriately (for example, 300 x 200 px).
2. Right-click the image, and select **Size**.
3. Select the **Alt Text** tab of the **Size** dialog box.
4. Paste the following into the Alternative Text box: url:
{concat(\$uuu_p_urlF, 'companyRegistry=', \$uuu_p_companyRegistryF, '&sessionId=', \$uuu_p_sessionIdF, '&id=', \$image)}

Note

The last parameter (\$image) was set as a variable to either the Company logo or the project or shell image. You must adjust the parameter if you want to include both images. Ensure that you use separate variable names for each.

To test an image:

The three parameters that you used to build your URL to the image are not downloaded as part of the sample data:

uuu_p_urlF

uuu_p_sessionIdF

uuu_p_companyRegistry

You must upload your RTF template to Unifier, publish the Custom Report, and then run the report to ensure that your image was inserted successfully.

Adding Oracle Analytics Publisher Fields to RTF File Header or Footer

Microsoft Word does not support form fields in the header and footer. As a result, you must populate the headers and footers with text or images from Unifier. For more information, see *Build Reports and Dashboards*, which is available at: <https://docs.oracle.com/en/middleware/bi/analytics-server/build-reports-and-dashboards.html>

To populate the headers and footers with text or images:

1. At the top of the RTF template (in the body, not the header), place the following tags:
<?template:header?>

<?end header?>
2. These tags form the start and end of your header. In between them, place the text and images you want to include in the report header.
3. Double-click into the header of the document. Ensure that none of the Oracle Analytics Publisher fields are highlighted.
4. Add the text: <? call@:header?> to place everything in the tags added above into the header at report runtime.

Importing a Template

After you have created your template, you can upload it into Unifier.

To upload your template:

Note

Invoices is used as an example.

1. Sign in as a Company Administrator.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Configuration**, and then select **Custom Reports**.
4. Open your Invoices Custom Report.
5. In the **Report File** tab (consisting of Add, Modify, Remove, and Download options)
 - a. Select **Add** to open the template window.
 - b. Enter information in the following fields: Template Name, Template Type, and Report Layout File.

- To localize the Custom Report output for different languages, you can provide XLIFF files for RTF-type templates here.
 - The Template Name field accepts spaces and other characters.
- c. Select **Browse** to select the template file for uploading.
 - d. Select **OK** to confirm the upload.
 6. Select **Browse** and upload the RTF file.
 7. Select **OK** to close the window.
 8. To publish your report, select it from the log, and select **Published** from the toolbar.

Your report is added to the list and Users can access the report from Projects, if they have the appropriate permissions.

Adding a Report to Navigator

To add your report to the Navigator:

1. Sign in as a Company Administrator.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**.
4. Open your Project or Shell Navigator. You must be able to see your Custom Report on the right side. If you do not see your Custom Report, ensure that you have published the report. See [Importing a Template](#).
5. Add your Custom Report to the Reports section on the left side (in the Navigator, you can create a subfolder under Reports called Advanced Reports).
6. Select **OK** to close the window.
7. Deploy the Navigator by highlighting it and selecting **Deploy** from the toolbar.

Setting Permissions on Report

You must give permissions to users so that they can run the new, custom report.

You can give permissions using a Project template (to distribute the permission to all projects), or do it on case-by-case bases, one project at a time.

To set permissions:

1. Sign in as a Company Administrator.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Company Sponsored Shells**, and then select **Projects**.
4. Find your project (the project that you want to add the Custom Report to) and open it.
5. Open the **User Administration** grouping node, and select **Access Control**.
6. Go to the Custom Report, and select the report to open the Permission Settings window.
7. Add View access for any Users or Groups that you want to be able to run the Custom Report in your project.

Repeat the preceding steps if you want to add your Custom Report to other projects.

Running the Report

To run your Custom Report:

1. Navigate to your Project that has your Custom Report (for example, the Project with Invoice BPs created and in an approved or pending state)
2. Run the report.

Advanced Oracle Analytics Publisher Functions

The following topics explain the advanced functions of the Oracle Analytics Publisher.

Conditional Formatting

With Oracle Analytics Publisher, it is easy to use conditional formatting to highlight table cells or entire table rows using conditional formatting.

Example

Highlight invoices with an amount over \$10,000.

Highlighting a Table Cell

1. After you create a table, place the cursor in the cell where want to apply conditional formatting.

Note

The cell must be either text or a Data Field.

2. Select **Conditional Format**. The Oracle Analytics Publisher Properties window open on the Properties tab.
3. From the Data field drop-down list select the data element that you want to evaluate to determine the conditional highlighting. This does not need to be the same data field in the cell that you are trying to highlight.
4. Specify whether that Data Field is a Number or Date/Text Field.
5. Enter the conditions for this Data Field using the pertinent drop-down list.
6. For each condition, specify the formatting that you want to be applied when that condition is met.

Only two conditions can be entered by using this window. If you have more than two conditions, you can select the Advanced tab and copy/paste the conditions already entered to create additional conditions. Ensure that you copy an entire "if" statement, up to and including the "<?end if?>"

Example

```
<?if:number(INV_AMOUNT)>10000?><?attribute@incontext:background-color; '#FFB9B9'?><?end if?>
```

Highlighting an Entire Table Row

To highlight an entire table row, follow the preceding instructions; however, ensure that you select **Apply to Entire Table Row**.

Publishing Oracle Analytics Server Custom Report

To publish an Oracle Analytics Server Custom Report:

1. Prepare the custom report.
2. Select **Status**.
3. Select **Publish**.

Making a New Custom Report Appear in Navigation

If you must change the location of Oracle Analytics Server custom reports, follow these steps to make newly defined reports appear:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**.

Note

If the company uses the default **User Mode Navigator** (that is, the company has not defined a custom **User Mode Navigator**), you will be able to see the report name under **Access Control** of the project.

3. Open the project or shell **User Mode Navigator**.
4. In the dialog box, find the newly created Oracle Analytics Server reports on the right side and move them to a desired location in the left Navigator.
5. Save the changes and close the window.
6. Select the project or shell **User Mode Navigator**, and select **Deploy** to ensure the changes take effect.
7. After deploying the navigator, sign out and then sign in, go to **Access Control**, and assign permissions for the new custom report.

Note

Oracle Analytics Server User Group requirement: To be able to create reports, users must be added to the Oracle Analytics Server Author user group in Primavera Administration.

Setting Permissions for Custom Reports

To set permissions for Custom Reports:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.

3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, expand **Reports**, expand **Custom**, and then select [report name].
4. Select the access for the appropriate user.
5. Select **OK**.

Note

- A user with the configure permission to the **Custom Report** node, can configure custom print templates. There are no separate permissions for performing actions on the custom print templates.
- If you have a **User Mode Navigator**, you must include the **Custom Report** in the navigator and redeploy before the user can assign permission through **Access Control**.

Running a Report

To run the Oracle Analytics Server Report in Unifier:

1. Sign in to Unifier.
2. Go to the shell tab, and switch to **User** mode.
3. In the left Navigator, select **Reports**, select **Custom**, and then select the applicable report node.
4. On the page for the selected report node, enter the **Template and Format**, enter the **Search Parameters**, and select **Run Report**.

Uploading a Template for External Data Model Type Custom Report

To upload a template for External data model type custom report:

1. In the Report file tab, select **Add/Modify**.
2. Select **Browse**, navigate to the .XDM file you want to use for the data model, and select **Upload**.
The system uploads the data model for the report to the BI server.
3. (Optional) To modify the data model, download it to your local drive by selecting **Download**.
4. Select **OK**.

You must upload the Data Model file (.XDM) from the custom report **Template File** tab, using the following parameters:

- `uuu_p_project_id`
Project ID
- `uuu_p_context_company_id`
Company ID
- `uuu_p_process_id`

Workflow process ID

- `uuu_p_source_id`
Business process record ID
- `uuu_p_object_type`
Business process ID as in uDesigner
- `uuu_p_hide_task_details`
To hide the task status if the user does not have permission. The value of 0 is passed if the user does not have permission to view the task statuses.
- `uuu_p_hidden_comments`
To view the hidden comments if the user has the permission. The value of 1 is passed if the user has the permission to view hidden comments.

These parameters are used to pass information from the Unifier runtime to the Oracle Analytics Server (integration at runtime).

Downloading Sample XML Data for Designing New Templates

This part of the **Sample Data** tab is for downloading sample data to use in designing a new report template file. You can download data from a specific project.

To download sample XML data for designing new templates:

1. (Optional) In the **Sample Project** field, select the project or shell data you want to generate.
If you do not specify a sample project or shell, the system will use data from the main view that was specified on the Views tab.
2. In the **Number of rows to return** field, specify the number of rows of data you want to use for designing the template.
3. Select **Generate**. This button is disabled in case of external data model report until the report has been published at least once.
The system generates a random sample of the XML from the Sample Project, or the main view of data.
4. Select **OK**.
You can then use this XML data in Oracle Analytics Server to design the template file.

Modifying Existing XDM for Custom Report or Custom Print Configuration

Changes to the Data view, Data Set, Query and Parameters are not applied to the XDM file by the system. Users need to apply those changes manually to the XDM file.

Data View

If a data view is changed, it may require a modification in the XDM file. For instance, if a new column is added and it is required in the layout of the report, the column must be added into the query in the data set in the XDM file.

Main View for Data set

If a main view is changed for the data set, it requires a modification in the XDM file to reflect the change in the From clause of the query of the main data set.

Query Parameter

The Element name for a Query is mapped to an Oracle Analytics Server parameter based on the format:

:uuu_p_{Element Name}

Note

Ensure the length of {Element Name} is less than 24 characters.

Any query parameters created on the elements of the main view on the query tab also need to be appropriately mapped in the Where clause of the main view query in the XDM.

To modify an existing custom report configuration:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Custom Templates** to open the log.
3. Select a custom report, and select **Open** to open the custom report window.

Note

The custom report must be in Draft status for modification.

4. Modify the fields as necessary. All fields except the "Report Level" can be modified, if the custom report has not yet been published. After the report has been published, the "Report Name" field also becomes un-editable.

Adding a Dynamic Image in the Custom Print Template

To add images from within Unifier to the Custom Print template:

1. Create form fields in the .rtf file, corresponding to the following parameters:
 - <?variable@begin:uuu_p_urlF;(./uuu_p_urlF)[1]?>
 - <?variable@begin:uuu_p_sessionIdF;(./uuu_p_sessionIdF)[1]?>
 - <?variable@begin:uuu_p_companyRegistryF;(./uuu_p_companyRegistryF)[1]?>

Note

The uuu_p_* is a predefined parameter in the data model.

2. Right-click the dummy image, select **Size**, and provide the following value in the **Description** field of the AltText information for the image:

Description: url:

```
{concat($uuu_p_urlF, 'companyRegistry=', $uuu_p_companyRegistryF, '&sessionId=', $uuu_p_sessionIdF, '&id=', <BPIMAGE> )}
```

In the **Description**, you can access the image by entering the complete path to the image or by using `../` to look for the image in the Data Model.

For example, in the preceding URL value, you must replace the **<BPIMAGE>** data element with the image file ID "k__<image element>" from the sample XML. See [Sample XML Data for Custom Templates \(Custom Prints and Reports\)](#).

Note

If the Data Model includes multiple levels, you must add each level to the path; for example, use: `../<level1>/<level2>.../BPIMAGE`

Adding a Dynamic Image in the Custom Report Template

To add images, from within Unifier, to the Custom Report template:

1. Create form fields in the `.rtf` file, corresponding to the following parameters:
 - `<?variable@begin:uuu_p_urlF; (../uuu_p_urlF)[1]?>`
 - `<?variable@begin:uuu_p_sessionIdF; (../uuu_p_sessionIdF)[1]?>`
 - `<?variable@begin:uuu_p_companyRegistryF; (../uuu_p_companyRegistryF)[1]?>`
 - `<?variable@begin:uuu_p_tenantIdF; (../uuu_p_tenantIdF)[1]?>`

Note

The `uuu_p_*` is a predefined parameter in the data model.`uuu_p_*`

2. Right-click the dummy image, select **Size**, and provide the following value in the **Description** field of the AltText information for the image:

Description: url:

```
{concat($uuu_p_urlF, 'companyRegistry=', $uuu_p_companyRegistryF, '&sessionId=', $uuu_p_sessionIdF, '&id=', <PROJECTIMAGE> )}
```

In the **Description**, you can access the image by entering the complete path to the image or by using `../` to look for the image in the Data Model.

For example, you must replace the **<PROJECTIMAGE>** data element, in the above URL value, with the image element taken from your sample data XML. See [Sample XML Data for Custom Templates \(Custom Prints and Reports\)](#).

Note

If the Data Model includes multiple levels, you must add each level to the path; for example, use: `../<level1>/<level2>.../PROJECTIMAGE`

Additional Information

In Cloud deployment, you can use the "uuu_p_tenantIdF" data element for passing the user ID to the Oracle Analytics Server report. This will include the required URL needed for accessing the image file, in the Oracle Analytics Server report. For legacy Oracle Analytics

Server reports, in Cloud or On-premises deployments, you can continue to use the following data elements for passing the user ID to the Oracle Analytics Server report:

- `uuu_p_urlF`
- `uuu_sessionIdF`
- `uuu_p_companyRegistry`

Adding a Dynamic Image in an Oracle Analytics Server Report

To add a dynamic Unifier image in an Oracle Analytics Server report, you must create a data set in the Data Model (XDM) file, as explained below.

Note

The following instructions apply to reports that run directly on the Oracle Analytics Server. The Oracle Analytics Server reports that run via Unifier do not require these changes.

In the .XDM file:

```
<dataSet name="security_token" type="complex">
  <sql>
    <![CDATA[SELECT token_value sec_token from ( SELECT
    token_value,expired,ROW_NUMBER() OVER (ORDER BY expired desc) rn FROM
    sys_server_token WHERE token_type = 'img') where rn = 1]]>
  </sql>
</dataSet>

<group name="security_token" label="security_token" source="security_token">
  <element name="SEC_TOKEN" value="SEC_TOKEN" label="SEC_TOKEN"
  dataType="xsd:string" breakOrder="" fieldOrder="1"/>
</group>
```

Note

The purpose is to get the server token from database where "expired" is the maximum from all the rows.

In the report template that requires to have the image to be inserted, change the "Alt text" of the image to point to image retrieval URL.

To retrieve a Unifier image, use the URL: `https://unifier-server-address/bluedoor/rest/image/<image_id>/<server_token>`

The report parameter `uuu_p_urlF` can be created in Data Model (XDM) file with a default value, so at the runtime the server address-part of the URL can be changed appropriately:

```
<parameter name="uuu_p_urlF" defaultValue="https://unifier-server-address/
bluedoor/rest/image" dataType="xsd:string" rowPlacement="8">
```

```
<input label="uuu_p_urlF" size="100"/>
```

```
</parameter>
```

The report template uses this URL in the "Alt text" of the image, as in: url:

```
{concat($uuu_p_urlF, '/', DATA_IMAGE_ID, '/', //security_token/SEC_TOKEN[1])}
```

Where: uuu_p_urlF can be the template variable, for example: <?

```
variable@begin:uuu_p_urlF;(./uuu_p_urlF)[1]?>
```

The security token, retrieved from DB by the dataset is: //security_token/SEC_TOKEN[1]

The runtime data (image ID) is: DATA_IMAGE_ID

Additional Information

In a Cloud deployment, you can use the "uuu_p_tenantIdF" data element for passing the tenant ID to the Oracle Analytics Server report. This will include the required URL needed for accessing the image file in the Oracle Analytics Server report. For legacy Oracle Analytics Server reports, in a Cloud or On-premises deployment, you can continue to use the following data elements for passing the user ID to the Oracle Analytics Server report:

- uuu_p_urlF
- uuu_sessionIdF
- uuu_p_companyRegistry

Adding Rich Text Data Element in Oracle Analytics Server Report and Custom Print

Unifier supports custom print and custom report for the "Rich Text" data element. You can use the "Rich Text" data element (of your BP form) in your data model. Furthermore, the HTML version of the "Rich Text" data element can be rendered as HTML, in the report, if the HTML version needs to be seen in the Oracle Analytics Server template.

To include the "Rich Text" data element:

1. Go to the report template file, for "Rich Text" data element.
The Rich Text fields in the Oracle Analytics Server template file are prefixed with: ?html2fo. For example, if the DE name is RTECODE, the DE name must be wrapped as it was in the template file as: <?html2fo: RTECODE?>. This will allow the template processor to treat the element as HTML.
2. To view the Rich Text type DE in correct format, in the Oracle Analytics Server reports (in the Oracle Analytics Server), go to the data model editor for the report and set the data type of the RTECODE data element column to XML.

In the Oracle Analytics Server, the Rich Text type DEs can be found in the <model>_richtext data model. In addition, when defining queries and Data Links in Custom Templates:

- The Rich Text type DE from the BP richtext views (model_richtext) must be restricted.
- The plain Rich Text type DE content, from the BP model, must be allowed.

When you add a Rich Text type DE to the custom print template:

The following HTML elements will not work in the *PDF* output format:

- Table
The borders will not display.
- Alignment
The left, right, and indent will not work.
- Image
Will not display.
- Code block
Will not work.

The following HTML elements will not work in the *RTF* output format:

- Table
The borders will not display.
- Alignment
The left, right, and indent will not work.
- Code block
Will not work.
- Block Quote
Will not work.

 Note

The Rich Text Data Element does not support indentation, bullets, or numbering, when configured in Custom Print or Custom Report.

Connect to the Database

A direct connection to the Unifier database using SQL Developer is not possible. The creation of SQL queries must be done in Data Views, or by pulling rows down from Unifier into a local database.

If you must pull the data into a local database for the purpose of SQL development, Oracle offers Oracle Database 11g Express Edition (XE) free of charge. You can install this lightweight DB on your computer and use it for development purposes.

Download Oracle Database Express Edition (XE). Refer to the XE documentation for instructions on how to install the software and create a local database.

(Optional) Pulling Down the Data

After you know the table names, you can export 200 lines so it can be inserted into your local Database (DB).

To pull down the data:

1. Sign in as a Company Administrator.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**.
4. Select **New** to create a Data View.

5. Enter a name (for example, Export DV) and a Label (for example, Export Data View).
6. In the SQL Definition field, enter the following for a particular table: `SELECT * FROM <tablename>`
7. Select **OK**.
8. Select the **Status** drop-down list, and set the newly created Data View to **Published**.
9. Highlight the Data View you just created, and select **Data** on the toolbar.
10. In the window, select **Export as SQL** on the toolbar to save the **.sql** file locally. This SQL file includes the CREATE and INSERT commands required to get your data into your local XE database.

At this point, you can create the table and insert the exported rows into your local XE database using tools like SQL Developer.

Repeat the steps above for any tables that you like to access offline.

 Note

You can reuse the same Data View multiple times; however, you must perform a find and replace in the downloaded SQL to ensure that the table names match the names that are in Unifier.

Because you have a subset of the database locally, you can use SQL Developer to write complex queries, offline, before bringing them into Unifier.

Configuring Project Numbering and Status

As the administrator, you can configure the project numbering and the status of each shell type. As part of the numbering scheme, you can enable and disable automatic numbering and you can update the format and starting number. The system implements the new settings for records created *after* the change is implemented and ensures that unique labeling is maintained. If you change the value of Format or Start, the system cannot guarantee that the selected sequence is available due to possible conflicts with existing data and might alter the selected information to prevent a conflict. Changing this information might also create gaps in the numbering sequence.

Example: If you specify a Format of ABC and a Start of 0001, and records ABC0001 through ABC0015 have been created, and you then change the Format to DEF and the Start to 0001, the system starts generating new records with DEF0001. If you change the Format to back to the original ABC and a Start of 0001, the system will begin the sequencing of new records using ABC0016.

To configure project numbering and status:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Shell Manager**.
3. Double-click the applicable shell type, such as Projects.
4. On the **General** tab, complete the following fields:
 - **Enable Automatic Numbering:** To allow automatic numbering of projects based on the specified **Format** and **Start** values, select this option. You can deselect this checkbox to disable automatic numbering; it is selected by default.
 - **Format:** If you enable automatic numbering, specify the format of the numbering schema. By default, **Format** is blank.
 - **Start:** If you enable automatic numbering, specify the starting number. Start determines the starting number of the numeric schema. By default, **Start** is 0001.
 - **Cost Codes:** This read-only field displays the type of cost code specified in uDesigner for the shell type.
 - **WBS:** Standard Cost Manager
 - **Generic:** Generic Cost Manager
 - **Status:** Select the applicable status, **Active** or **Inactive**. Users cannot access shell types that have an **Inactive** status. The default is **Inactive**.

Note

If a project/shell is open and visible when its corresponding shell type is changed to Inactive, you cannot create a new shell of the applicable type but existing shells are not affected.

5. When you are done, select **Save**.

View, Print, or Export the Configuration - Shell Manager Audit Log

To use the Audit Log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Shell Manager**.
3. Select the applicable shell type.
4. From the toolbar, select **Open Audit Log**.
The Audit Log displays a variety of information, including the date on which a change was made, what the previous value was, and who made the change.
5. To print or export the information, select **Print** , and select one of the following:
 - **Print:** The system generates a PDF version of the log, which you can save or print.
 - **Export To CSV:** The system generates and downloads a comma-separated value (CSV) version of the log.
 - **Export To Excel:** The system generates and downloads a Microsoft Excel version of the log.

Configuring the User Mode Navigator

You (Company Administrator) can configure the **User Mode Navigator** to better suit the company business needs. The **User Mode Navigator** lets you modify the appearance and organization of the modules and business processes that are available in the left Navigator for all company users.

To access the configuration settings:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**.

This functionality of the **User Mode Navigator** is limited to the collaborative portions of **User** mode navigation in the Home tab, Company Workspace, Shells, and Projects.

Note

This configuration will affect **User** mode navigation for all users in your company. Oracle strongly recommends that you fully test your configurations in the **Development/Test** environment.

Within the **User Mode Navigator**, you can create grouping nodes, rename existing ones, reorder items within the nodes, and even remove unused modules from the Navigator, to provide increased flexibility to organize and view modules and business processes. The configured view will appear for all users.

As always, access to any module or business process is strictly controlled by permission settings. The **User Mode Navigator** feature does not override permission settings in any way; it simply lets you customize the look and organization of navigator modules that a user has permissions to access. Any changes you make to the **User Mode Navigation** tree will be reflected in the **Access Control** view.

Example

- If a user has permission to access at least one leaf node under a grouping node, the grouping node will appear in the user's view of the left Navigator.
- If the user does not have permission to any leaf nodes under a grouping node, the grouping node will not appear in the user's left Navigator.

The following terminology is used with **User Mode Navigator**:

- **Grouping node**: This is a container "parent" node. Grouping nodes are easy to identify because they have a (+) next to them in the navigation tree. Selecting a grouping node in the left Navigator expands the node to display any child nodes below it; the child nodes can be leaf nodes, or another grouping node (also known as a functional node), for example, Project Logs, Cost Manager, and so forth.
- **Actionable grouping node**: This type of grouping node not only expands to display child nodes underneath it, but also refreshes the right pane and displays an associated log or page, for example, Projects node, which expands to display the project nodes in the left Navigator and also opens the Project home page.

- **Leaf node:** This is a child node that cannot become a grouping node. In the last node of the navigation "tree," no further branching can take place. Selecting a child node refreshes the right pane to display the associated module or log, for example, Cost Sheet within the Cost Manager, or the individual business process logs under Project Logs.

The configurable navigator lets you:

- Configure navigation trees for:
 - Company Workspace Navigator
 - Home Navigator
 - Project/Shell Navigator

 Note

The settings do not take effect in your users' navigators until you deploy them.

The **User Mode Navigator** enables you to:

- Create grouping nodes (**New**) for:
 - Company Workspace
 - Home tab
 - Project/Shell tab
- Copy an existing navigator setup (**Copy**)
- Deploy a navigator (**Deploy**)
The system performs a check to see whether there are any other navigators of the same type currently active. If so, the system notifies you that the currently deployed navigator will be set to an "Inactive" status.
- Undeploy a navigator (**Undeploy**)
When selecting this option for an **Active** navigator, the navigator (for the type selected) displays system defaults during the runtime.
- Include a navigator for your configuration package
 - To be able to define multiple navigators per object and create configuration packages to suit various out-of-the-box (OOTB) solutions. Each OOTB solution has its own configuration of business processes, reports, and so forth along with User mode.
 - You can include multiple navigators in the component list and create your configuration package.
 - The status of a navigator does not impact export.
 - The first time that you package a User Mode Navigator setup, you must include all the designs (on the left side of the Navigator) in the package. If you do not include the designs, the configuration package creation will result in an error.
 - For Active navigator setups, the Last Deployed Date must be greater than the Last Saved Date.
 - If the navigator status is set to **Active**, then the system deploys that navigator to the destination environment. If the status is **Inactive**, then the system adds the navigator to the User Mode Navigator list.
 - If a navigator with the same name exists in both the package and the destination server, then the system updates the content at the destination server.

- If the status of the navigator in the destination server is **Inactive** and the status of the navigator in the package is **Active**, then the system deploys the navigator and changes the status to **Active** in the destination server.
- If the status of the navigator in the destination server is **Active** and the status of the navigator in the package is **Inactive**, upon import of the configuration package, the system updates the content of the navigator, but the navigator will not be deployed.
- Custom Oracle Analytics Server reports can be a part of the User Mode Navigation setup.
- Internal Oracle Analytics Server reports, included in the setup, must be either a part of the package or exist in the destination server. If the Internal Oracle Analytics Server report is in **Draft** status, the import will succeed if the Internal Oracle Analytics Server report has been published, in the destination server, at least once.
- External Oracle Analytics Server reports, included in the setup, must be either a part of the package or exist in the destination server. The External Oracle Analytics Server report name, location, and report level that exists in the destination server must match the attributes existing in the package.
- Rename new and existing grouping nodes
- Change the icons associated with the nodes
- Move nodes up and down the navigation tree, or from one grouping node to another
- Remove unused modules from the navigator without deleting the modules themselves
- Move business process logs or other modules between new or existing grouping nodes
- Include Single-Record business processes under the Home tab by copying them from the **Available Modules and Business Processes** section to the **Selected Modules and Processes** section.
- Store the following versions of the navigator:
 - Last saved version
 - Last deployed version
 - System default version,
- Restore the navigator to any of the above versions at any time

Note

Configuring navigator is a separate setup. As a result, the new business processes do not appear in the log selected in the configuration. Instead, the new business processes appear in the right pane of the user's configurable navigator window. To place the new business processes inside the corresponding node in the left Navigator and make it available to the users, you must transfer the new business processes manually.

Create a User Mode Navigator Configuration

You can create one configuration for user mode Project, Shell, or Company Workspace.

To create a project or company workspace navigator configuration:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The **User Mode Navigator** log lists all previously created configurations.
3. Select **New**, and choose one of the following:
 - **Home**: Configures the navigation node for the **Master Log - Business Processes** node.

 Note

You cannot hide the Tasks, Notifications, Drafts, and Mailbox nodes in the Home  tab.

- **Company Workspace**: Configures the navigation nodes within the Company Workspace portion of the User Mode Navigator
- **Project/Shell**: Configures the project- or shell-level navigation

The Create New Navigator window opens. The left portion of the window displays the navigation as it would appear for users. In the example below, the default navigation is displayed, because a new configuration has not been deployed. The right pane of the window displays available modules or business process logs that can be added to the navigation on the left.

4. Configure the new navigator configuration as described below.
5. To save the configuration, select **OK**.

The configuration will be displayed in the log. There can be one configuration each for Project, Shell, or Company Workspace. After saving, you must deploy the configuration for it to take effect. See [Deploying a Navigator Configuration](#).

You can configure the new project or company workspace navigation. After deploying, the configuration will appear in the User Mode Navigator for all users in your company.

Use the toolbar to configure the navigation:

- **New**: Creates a grouping node.
- **Rename**: Lets you rename the selected grouping node.
- **Expand All**: Expands all grouping nodes to reveal their functional sub-nodes.
- **Move Up / Move Down**: Moves selected nodes up or down in the navigator.
- **Cut / Paste**: Lets you cut and paste nodes from one grouping node to another.
- **Restore**: Restores the configuration to the system default, or the last deployed version.
- **Change Icon**: Lets you change the icon of the selected node.

To expand all navigator nodes:

In the navigator window, select **Expand All**. This expands all grouping nodes and lets you view all the nodes currently present in the navigation. You can contract a grouping node to hide the leaf nodes by selecting the (-) next to the grouping node name.

Create a Grouping Node

You can create a grouping node to use to organize modules or business process logs.

To create a grouping node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. Open a configuration from the log.
4. In the left box, select a valid parent node.
This can be the root node (Company Workspace, Shell, or Project), or any other grouping node in the navigator tree (for example, Cost Manager or Project Logs).
5. Select **New**.
The newly created node is created under the selected node. The default name is New Grouping Node, and uses the default icon of a file folder. Grouping nodes can be renamed, moved, and given a new icon.

Rename a Grouping Node

You can rename any new or existing grouping nodes in the left Navigator, with the exception of the root node (Project/Shell or Company Workspace). You cannot rename leaf nodes.

To rename a grouping node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. Open a configuration from the log.
4. In the left box, select the node, and select **Rename**. The field becomes editable.
5. Enter a new name for the field, up to 32 characters. Grouping nodes under same parent node cannot have same name.

Change the Icon of a Grouping Node

You can change the icon of any grouping node except the root node (Projects/Shells, Company Workspace).

To change the icon of a grouping node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. Open a configuration from the log.
4. In the left box, select the grouping node, and select **Change Icon**.
The available icons are displayed.
5. Select the new icon.
The icon immediately appears on the selected grouping node.

Move Nodes within the Navigator

You can move any grouping node or leaf node up or down the navigator, either within the original grouping node, or from one grouping node to another. There are three ways to move nodes within the navigator:

- Move a node up and down the navigation tree within its parent grouping node
- Move a node from one grouping node to another

To move a node up or down the navigator:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. In the navigator window, select the node to move.
4. Select **Move Up** or **Move Down** to move the node up or down within the parent grouping node. If you move a grouping node, all child nodes move with it.

To move a leaf node from one grouping node to another:

1. In the navigator window, select the node to move.
2. Select **> (right arrow)** to move the node to the right pane. Continue with each node that you want to move.
Only leaf nodes will be moved. If you select a grouping node, only the leaf nodes underneath it will move to the right pane. The grouping node itself will be deleted.
3. In the left pane, select the destination grouping node into which you want to move the leaf nodes.
4. In the right pane, select the leaf node to move, and select **< (left arrow)**. The leaf node moves to the grouping node on the left. Repeat as needed with any other leaf nodes to move.

Note

If you leave a leaf node in the right pane and deploy the configuration, that module or business process will not appear on the User Mode Navigator for users.

To move a node from one grouping node to another by cut and paste:

1. In the navigator window, select the node to move. You can select a grouping node or leaf node.
2. Select **Cut**. (The selected node will not yet be removed.)
3. In the left pane, select the destination grouping node in which to move the selection.
4. Select **Paste**. The node will be moved the new location. If you have selected a grouping node, the grouping node and all leaf nodes will be moved.

Remove Unused Nodes (Modules) from the Navigator

If there are nodes (modules) that your company never uses, and that cannot be hidden by use of permission settings (for example, the Mailbox node), you can remove them from the User Mode Navigator. The nodes themselves will not be deleted, and can be restored to the Navigator at any time.

To remove a module from the User Mode Navigator:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. In the navigator window, select the node to remove.
4. Select **> (right arrow)** to move the node to the right pane. Continue with each node that you want to remove.
Only leaf nodes will be moved. If you select a grouping node, only the leaf nodes underneath it will move to the right pane. The grouping node itself will be deleted.
5. Save and deploy the configuration. The nodes that remain in the right pane will not appear in the User Mode Navigator.

Delete a Grouping Node

Any grouping node can be deleted. Leaf nodes cannot be deleted; however, you can remove them from the User Mode Navigator that appears to all users. See [Remove Unused Nodes \(Modules\) from the Navigator](#).

To delete a grouping node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. In the left pane of the navigator window, select a grouping node.
4. Select **> (right arrow)**. The grouping node is deleted. If the grouping node contains leaf nodes, the leaf nodes are moved to the right pane, and the grouping node is deleted.

Deploying a Navigator Configuration

After you have created a navigator configuration, it must be deployed for changes to take effect in User mode. After you deploy the navigation, the view will be displayed to all users.

To deploy a new navigator:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. In the User Mode Navigator log, select the configuration to deploy.
4. Select **Deploy**.
5. After the navigation configuration is deployed and a **Confirmation** message appears, select **OK**.

The navigator change takes effect immediately for all users.

Delete a Navigator Configuration

If you delete a configuration from the User Mode Navigator log, the system defaults for the applicable portion of the User Mode Navigator (Project, Shell, or Company Workspace) will be restored back to the system defaults automatically.

To delete a configuration and restore the navigator to system defaults:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **User Mode Navigator**. The User Mode Navigator log opens. The log lists any previously created configurations.
3. In the User Mode Navigator log, select the configuration to delete.
4. Select **Delete**.
5. When the **Confirmation** message appears, select **Yes**.
The User Mode Navigator will be restored to system defaults immediately.

Restore the Navigator to Previous or Default Configuration

You can restore the navigator configuration to a previously saved version, the last deployed version, or to original system default at any time. You must still deploy the restored navigator for it to take effect.

To restore the navigator to a previous or default version:

In the configurable navigator window, select **Restore**, and choose one of the following options:

- **Last Saved:** Restores the navigation tree to the last saved version, regardless of deployment
- **Last Deployment:** Restores the navigator to the version that was last deployed (not applicable for new configurations that have not yet been deployed)
- **System Default:** Restores the navigator to the original system defaults

Unifier Mobile Application

The Unifier Mobile Application is built specifically for installation and use on mobile devices that use iOS or Android operating systems. To get the mobile app, you have the following options:

- Download it from the App Store or Play Store, or
- Launch Unifier, select your user name in the upper-right corner, select **Get Unifier Mobile App**, and follow the prompts.

After download, you can scan the QR code to set up the Server URL and user name on your Unifier Mobile App.

Note

- If you are in a region without access to the Google Play Store, Apple App Store, or your organization is using a Content Security Service or Mobile Device Management solution and requires that users do not download from the Apple Store or Play Store, submit a Service Request in [My Oracle Support](#) to request versions of the Unifier Mobile Application for those scenarios.
- If your iOS device does not have the Passcode feature enabled, you can download and install the mobile application; however, the system displays a message that indicates you must go to Settings and enable the Passcode feature before you can use the application.
- If your iOS device is jailbroken (lacks the manufacturer's restriction that prevents installation of unauthorized software), you can download and install the mobile application; however, the system displays a message that you cannot use it with a jailbroken device.
- You must have permission to access the Unifier Mobile App. If you receive a message that indicates you do not have permission, contact your Company Administrator.

Important sign-in information for on-premises users on non-SSO servers

For on-premises customers on non-SSO server (prior to 19.12.2):

Unifier Mobile App uses the Basic Authentication for login while connecting to the Unifier web application deployed on a non-SSO server.

For on-premises customers on non-SSO server (on or after 19.12.2):

Unifier Mobile App uses Form-based Authentication while connecting to the Unifier web application deployed on a non-SSO server. As a result, you must use the latest version of the mobile app to access data on your device.

Note

The user preferences, in the Unifier web application, will be effective when you sign in to the mobile app.

Unifier and Other Oracle Applications

Unifier objects can be integrated with other Oracle applications by way of:

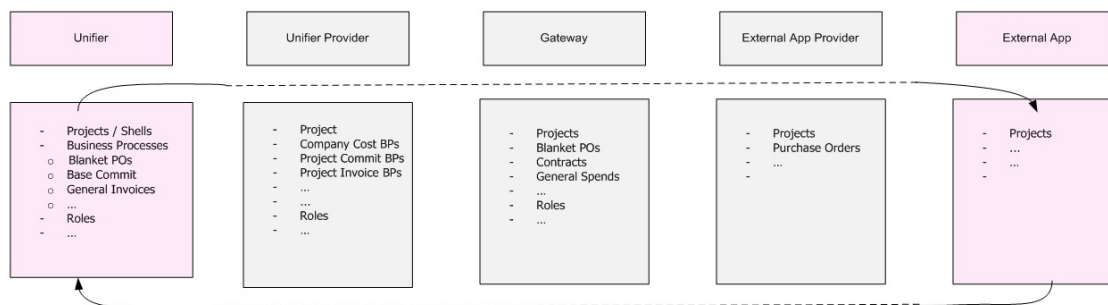
- **Web Services:** Client and server applications that communicate over the World Wide Web's (WWW) Hypertext Transfer Protocol (HTTP) and provide a standard means for operation between software applications running on a variety of platforms and frameworks, using XML. For more information about Web Services integration, refer to the *Unifier Integration Interface Guide*.
- **Oracle Database Gateways:** Addressing the needs of disparate data access and making it possible to integrate with any number of non-Oracle systems from an Oracle application. Oracle Database Gateways enable integration with data stores such as IBM DB2, Microsoft SQL Server, and Microsoft Excel, and transaction managers like IBM CICS.

Unifier is integrated with the following enterprise applications via Primavera Gateway:

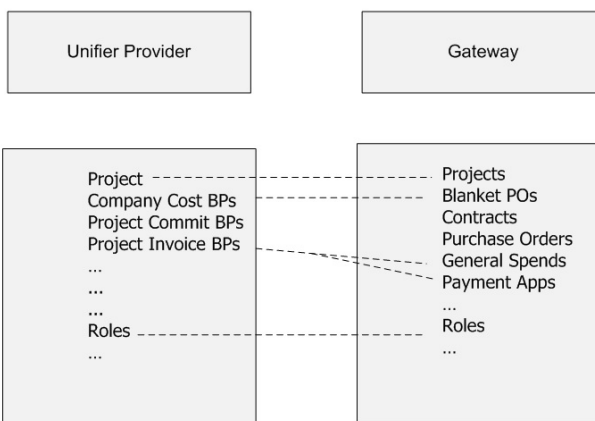
- Oracle Primavera Analytics
- Oracle Primavera P6
- Oracle E-Business Suite (also known as Applications/Apps or EB-Suite/EBS)

As shown below, after all the objects are created and linked to each other, data flows to Unifier (business flows/synchronizations) in this formation: Oracle application/external application flows to Oracle application/external Provider, which flows to Gateway, which flows to Unifier Provider , which flows to Unifier

Unifier integration with other applications via Gateway



Provider must have a hard-coded (Java-code) link to the corresponding object in Gateway



The following sections describe the process in detail.

Unifier and Primavera Analytics

Analytics provides an in-depth and comprehensive method for analyzing and evaluating:

- Shells
- Project performance
- Project history
- Business Processes (including Vendor analysis)
- Cost Sheet
- Cash Flow
- P6 Summary Sheets
- Generic Cost Sheet
- Space Utilization (from Space Manager)

Configure this section for users to ensure they can see data within Analytics.

If the **Analytics** module is enabled, the Company Administrator can access the **Analytics** module by signing into Unifier and navigating to the **System Modules** node (go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Data Structure Setup**, and then select **System Modules**).

Note

The System Administrator has to load the Analytics module.

Users can use the Analytics for data input and must have permission to be able to access the **Analytics** node. Permissions set in Unifier (**Access Control**) enable users to view the data in Oracle Analytics Server. Users ability to access Oracle Analytics Server is also set in Unifier.

Analytics Node

The Analytics node is located under the Integrations grouping node. In the Analytics node, you can select publication of data to staging tables, map data, and set schedule for periodic publication of data into Analytics.

Note

A separate ETL process pushes the staging data into STAR which then becomes available in Analytics.

When you select the Analytics node, the log displays predefined set of modules such as:

- Business Processes
- Cash Flow
- Cost Sheet
- Generic Cost Sheet
- P6 Summary Sheets
- Shells
- Space Manager
- Vendors

Analytics Log Properties

The Analytics log has two columns which display the Name and the Last Modified Date of the records.

The Analytics log toolbar has the following options:

- Open
- Schedule
- Run Now
- Run History

The Open, Run Now, and Run History options can be accessed from the File menu. The Schedule option can be accessed from the Edit menu.

Analytics Log (Business Process) Setup

You can set up Dashboards and Analyses, for Unifier Business Processes, in Oracle Analytics Server analyses and select the Business Process data that you want to use for analyses.

When you open a Business Process in the **Analytics** node, you will see the **Analytics - Business Process Setup** window with the following tabs:

- Business Processes tab
- Custom Fields tab
- Data Mapping tab

Business Processes tab

Select Business Processes for Analytics

The **Business Processes** tab allows you to select the Business Process that you want to use in Analytics.

Use the **Add** and **Remove** buttons to add or remove the Business Processes for Analytics. To add a new Business Process for use in Analytics:

1. Select **Add** to open the Select Business Processes for Analytics window that lists all the company-level and shell-level Business Processes, in alphabetical order.

Note

This list includes Active and Inactive Business Processes.

2. Select one Business Process, or select as many as you need, and select **OK** to add the Business Process to the log.

Note

After you added the Business Process, that Business Process will no longer be available in the Select Business Processes for Analytics list.

You can remove a Business Process that is published for Analytics. To remove a Business Process for use in Analytics, select the Business Process from the Select Business Processes for Analytics list, and select **Remove**. You can delete multiple Business Processes from the list. You can add a removed Business Process for Analytics reporting. Select **Add** if you want to add a removed Business Process to the list.

If a Company Administrator inactivates a Business Process that has been used for Analytics, this Business Process continues to remain in the Business Processes tab. If you remove a Business Process from the Business Processes tab, data that exists in Analytics, for the removed Business process, remains as is; however, the new data will not be published.

To save space, you can decide not to track the history of facts and dimensions, on a Business Process.

In the **Analytics - Business Processes Setup** window (**Business Processes** tab) you can select a business process and mark to not track the history of the business process data

elements (**Track History of Data Elements?** column). By default, all BPs in this tab are selected to have their history tracked. After your initial selection in the **Track History of Data Elements?** column for a BP, if you open the **Analytics - Business Processes Setup** window and go to the **Business Processes** tab and deselect the track history option for a BP, Unifier will notify you that the BP will no longer maintain the historical data in Analytics.

For a BP with track history option selected, all data mapping changes for the elements of the BP will be recorded as errors in the historical data in Analytics.

Note

The **Track History of Data Elements?** column values will be included in the Configuration Package during export or import.

Custom Fields tab

The Custom Fields tab is available after you add your Business Processes in the Business Processes tab. The Custom Fields tab has two sections:

- Main Form Elements
- Line Item Elements

You can specify values in each field to set the number of user-defined fields for Data Mapping. The default values displayed are based on the existing user-defined fields limit that is currently set in Unifier.

The total number of Main Form custom fields cannot exceed 900. Similarly, the total number of Line Item custom fields cannot exceed 900.

When entering values in the fields:

- Use numeric values.
- Do not use decimal points.
- Use numbers greater than the default values.

Note

The number of fields specified are bundled as a part of configuration package, if the component has been tagged.

Data Mapping tab

The Data Mapping tab allows you to map the predefined Analytic Business Process fields to a corresponding Data Element (DE) in the Business Process.

Note

- The Data Mapping tab is available after you have added a Business Process, in the Business Processes tab, and selected Apply or OK.
- The Data Mapping is done per DE and not per Business Process. All Business Processes added in the Business Processes list tab are included and you do not need to select a specific Business Process for mapping.
- The fields from both Upper and Detail forms can be mapped in the Data Mapping tab, and you can change mapping of the fields.
- The workflow data (Steps and tasks), related to any Workflow BP, is also sent to Analytics.
- The DE of type Rich Text is not available to be mapped to the UDFs from Analytics.

The Data Mapping tab displays the following information:

- Name
- Source
- Data Source
- User Defined Attributes
 - Name
 - Data Type
 - Source
 - Data Source
 - Label

Note

In addition to the system defined fields for Analytics, you can define additional custom fields for Analytics in the User Defined Attribute section.

Name

The Name column is pre-populated and displays the following names:

- Specification Section
- Vendor ID
- Contract Type
- Reason
- Unit of Measure
- Spend Category
- Quantity
- Unit Cost

The names above represent the fields used in Oracle Analytics Server. These are read-only fields and you cannot modify them.

All the "Main Form" fields are listed first and are sorted alphabetically within the source.

All the "Line Item" fields are listed after the Main form fields and are sorted alphabetically within the source.

Source

The Source column displays the location of the Data Element (DE) seen in the Data Source. For Business Processes, the DEs can either be from the "Main Form" or the "Line Item."

Data Source

The Data Source column contains a consolidated list of all DEs for all the selected Business Processes in the Business Processes tab. In addition:

- The list of values displayed upon selecting the Data Source drop-down will be those that have a matching data definition as the Name field. When you select the Data Source drop-down list, it contains a list of values that have a matching Data Definition (DD) as the Name field.
- The drop-down list, which requires the Upper form mapping, contains a consolidated list of all Upper form DEs. For example, if there are ten Upper forms from all the Business Processes, and each Upper form has 10 DEs, the list of DEs displayed in the drop-down list will be a consolidated and unique list of DEs from all the Business Processes.
- The drop-down list, which requires the Detail form mapping, contains a consolidated list of all Detail form DEs. For example, if there are twenty Detail forms, and each Detail form has 10 DEs, the list of DEs displayed in the drop-down list will be a consolidated and unique list of DEs from the Detail forms of all the Business Processes.
- The fields displayed in the Data Source drop-down list is a concatenation of DE Label and DE Name, and the DE Name is displayed within parentheses. For example, Department(contract_department)

User Defined Attributes

The User Defined Attributes section of the Data Mapping tab lists the following columns:

- Name
- Data Type
- Source
- Data Source
- Label

The Label will be based on the selected DE label, but you can change it.

Use the Add, Modify, and Remove to add, modify, or remove user defined attributes.

To modify a user-defined attribute, select the attribute, select **Modify**, and modify the fields.

To remove a user-defined attribute, select the attribute, select **Remove**, and modify the fields.

To add a user-defined attribute, read the following information:

When you select **Add**, the **Add User Defined Attribute** window opens. This window allows you to select the following required fields:

- **Data Type**

- **Source**
- **Name**
- **Data Source**
- **Label**

Note

- A value for the required Label field will be selected by the system.
- The Label field is populated based on the Data Element that you have selected from the Data Source drop-down list.
- The Label field is editable and required. You will receive an error message if you leave the Label field blank.
- If you notice that the value in the Label field has changed, it means that other fields have been updated at one point.
- Analytics displays the value, if the label is absent.
- Analytics displays the label, which has the Value/Label pair, in the case of Data Elements (DEs).

The **Data Type** that you select impacts the Name and the Data Source of the user-defined attribute. The **Data Type** field allows you to select the following attributes, only:

- String (default)
- Date
- Numeric

For example, if you select **String** as your Data Type, you can:

- Select from a predefined set of sources from Source drop-down list (Main Form or Line Item).
- Add up to 30 names (User Defined String Fields 1 - 30) as the Name.
- Select from a predefined set of data sources from Data Source drop-down list.
- The content of the Label field will be selected by the system and according to your other selections.

Analytics Dimension and Fact

The Data Type that you select corresponds to the Analytics fields as follows:

- If the Data Type that you select is String/Date, your selection corresponds to a Dimension object in Analytics.
- If the Data Type that you select is Numeric, your selection corresponds to a Fact object in Analytics and is only available in the Primavera - Project User Defined.

Additional information

- If the same DE exists in both Upper form and Detail form, the DE is displayed for the Upper form fields, as well as the Line Item fields.
- If you map a DE for one field, you can map the same DE to another field. You can choose the DEs, per your Company business needs, when setting up the mapping.

- If you change the mapping of the fields, for the new records, the next time the data is published to Oracle Analytics Server, the values will be as per the updated fields. To refresh all the records, select the checkbox option in the Schedule tab.
- If you delete a DE mapped to an Analytic field, the Data Source field displays only the DE name.
- If there are any un-mapped fields in the Data Mapping tab, the un-mapped fields appear in the DE list, based on the updated design.
- If you delete a Business Process, and select Apply, the Data Source field displays only the DE name.
- The allowed user-defined attributes is driven by the number that is set in the Custom Fields tab.
- Pickers are available for String field mappings for both canned and user defined attributes and are as follows:
 - BP Data Picker
 - Shell Data Picker
 - Space Data Picker
 - User Data Picker
 - BP Picker
 - User Picker
 - Shell Picker
 - Space Picker
 - BP Creator
 - P6 Activity Picker

Summary Payment Application (SPA) SOV type BPs

You can perform data reporting in Analytics for Base Commit, Change Commit, and Payment Application Business Processes of SPA SOV type. The system sends the following Cost allocation Line Item details to Analytics:

- Cost Code
- Cost Name
- Short Description
- Quantity
- Unit Price
- Amount

If you need to transfer data from any field (at the Summary level) to Analytics, you must map the field to a User Defined Field in Line Items of the Business Process. The system sends the mapped field to Analytics as a part of Cost allocation Line Item.

Note

Users can map any field that exists in the Detail form.

The values of the fields in the existing Cost allocation Line Items are retained for the fields that are common to both the Summary and Cost allocation Line Items. The following explains the details:

- **Cost Code**
The value of the field in the Cost allocation Line Item is retained. The CBS Picker field does not exist in the Detail Form design.
- **Cost Name**
The value of the field in the Cost allocation Line Item is retained. The bi_item field does not exist in the Detail Form design.
- **Short Description**
The value of the field in the Cost allocation Line Item is retained.
- **Quantity**
The value of the field in the Cost allocation Line Item is retained.
- **Unit Price**
The value of the field in the Cost allocation Line Item is retained. The Unit price is auto-populated from the value of the field in the Detail Form and is a read-only field in the Cost allocation Line Item. The value of the field in the Cost allocation Line Item will match the value of the field in the Detail Form.
- **Amount**
The value of the field in the Cost allocation Line Item is retained.

Analytics Log (Cash Flow) Setup

You can set up Dashboards and Analyses, for Unifier Cash Flow data, in Oracle Analytics Server analyses and:

- Select the Cash Flow names that you want to use for analyses.
- Set up the data for the fields related to Cash Flow in the Cash Flow record.

When you open a Cash Flow record in the Analytics node, you will see the Cash Flow Setup window that contains the Cash Flow names defined in Shells. In this window, you can add a Cash Flow record and select Apply to see the Data Mapping tab.

In addition to the system-generated Cash Flow Curves, you can add additional user-defined Cash Flow Curves (total of 10). The User Defined Curves section, in Data Mapping tab of the Cash Flow Setup, displays the additional 5 Cash Flow Curves (User Defined Curves from 6 to 10).

Cash Flow tab

Use the Cash Flow tab to select the Cash Flow names that you want to use in Analytics. Once selected, you can use Add to add the name or Remove to remove a Cash Flow.

To add a new Cash Flow:

1. In the Analytics - Cash Flow Setup window, Cash Flow tab, select Add to open the Cash Flow window, Select Cash Flow for Analytics.

Note

This list includes the available Cash Flow items, from all CBS Shells with Detail Levels of CBS, Summary CBS, and Commitment in alphabetical order.

2. Select one Cash Flow, or select as many as you need, and select OK to add the Cash Flow to the log.

Note

After you add a Cash Flow, that Cash Flow will no longer be available in the Select Cash Flow for Analytics list.

You can remove a Cash Flow item that is published for Analytics. To remove a Cash Flow item for use in Analytics, select the Cash Flow item from the Select Cash Flow item for Analytics list and select **Remove**. You can delete multiple Cash Flow items from the list. You can add a removed Cash Flow item for Analytics reporting. Select **Add** if you want to add a removed Cash Flow item to the list.

Data Mapping tab (Cash Flow)

The Data Mapping tab allows you to map the predefined Analytic Cash Flow fields to a corresponding Unifier Cash Flow Curve type.

Note

The Data Mapping tab is available after you have added a Cash Flow item, in the Cash Flow tab, and selected Apply or OK.

The Data Mapping tab displays the following information:

- **Name:** Predefined and represents the fields used in Oracle Analytics Server.
 - The names are grouped logically and sorted based on Initial Baseline, Current Baseline, Actuals, Forecast, and User Defined Curves (1 through 10).
 - The drop-down list for the Initial Baseline and Current Baseline includes the items that are based on the Baseline Cash Flow curve type, defined under the Cash Flow data sources (Cashflow Datasources window) in the Standards & Libraries.
 - The drop-down list for the Actuals includes the items that are based on the Spends curve type.
 - The drop-down list for the Forecast includes the items that are based on the Forecast curve type.
 - The drop-down list for the User Defined Curves (1 through 10) includes all the Cash Flow data sources. The items listed are based on the Cash Flow curve type and sorted in alphabetical order.
- **Data Source:** The Cash Flow data sources are defined by: going to the **Company Workspace** tab, and switching to **Admin** mode; in the left Navigator, selecting **Standards & Libraries**, selecting **Cash Flow**, and then selecting **Data Sources**.

- The fields displayed in the Data Source drop-down list is a concatenation of the Cash Flow data source name and Cash Flow curve type.

The Analytic field name can be the same as the Data Source name. For example, you can map a User Defined Curve to data source named, "Initial Baseline."

The following is a list of fields that need mapping for Cash Flow:

- Initial Baseline
- Current Baseline
- Actuals (Spends)
- Forecast
- User Defined Curves (labeled 1 through 10)

 Note

Cash Flow Derive curve is not supported.

Analytics Log (Cost Sheet) Setup

You can set up Dashboards and Analyses, for Unifier Cost Sheet data, in Oracle Analytics Server analyses and select the Cost Sheet column data that you want to use for analyses.

This section explains the following topics:

- **Data Mapping - Columns**
- **Data Mapping - Cost Attributes**

When you open a Cost Sheet record in the Analytics node, the **Analytics - Cost Sheet Setup** window opens with the following tabs:

- **Data Mapping - Columns**
- **Data Mapping - Cost Attributes**

The following explains each tab and their respective fields.

Data Mapping - Columns

The **Data Mapping - Columns** tab is divided in two sections:

- System-defined columns: Listed on top of the window.
- User-defined Columns: Listed under **User Define Columns** section of the window.

The system-defined columns of the **Data Mapping - Columns** tab allows you to map the Cost Sheet Analytic fields to a corresponding Cost Sheet Data Source defined in Unifier.

In addition to the system-defined Cost Sheet columns, you can add additional user-defined columns (total of 20). The **User Defined Columns** section, in **Data Mapping - Columns** tab of the Cost Sheet Setup, displays the additional 10 columns (User Defined Columns from 11 to 20).

The top section of **Data Mapping - Columns** tab (system-defined columns) has the following columns:

- **Name**

- **Data Source**

The following explains each column.

Name

Lists a series of predefined fields which correspond to the fields used in Oracle Analytics Server.

Note

Since the fields under Name are grouped logically, the order displayed is according to the list of fields that need mapping for Cost Sheet.

This is a list of predefined fields:

- Estimate
- Original Budget
- Pending Budget Revisions
- Approved Budget Revisions
- Revised Budget
- Contracts
- Purchase Orders
- Original Commitments
- Forecast
- Pending Change Orders
- Pending PO Amendments
- Pending Commitment Changes
- Approved Change Orders
- Approved PO Amendments
- Approved Commitment Changes
- Revised Commitments
- Pending Payment Applications
- Pending Invoices
- Pending Spends
- Approved Payment Applications
- Approved Invoices
- Approved Spends
- Actuals Received
- Journal Entries
- Risks & Issues
- Forecast Adjustments

- Budget Variance
- Remaining Budget
- Budget Percent
- Commitment Percent

Data Source

Lists the corresponding data source to each field that is listed in the **Name** column. The values in the **Data Source** fields:

- Are divided into two sources (*Single Sources* and the *Logical Sources*).
- Are sorted in alphabetic order.
- Exist in the Cost Sheet for all CBS type Shells.

The lower section of **Data Mapping - Columns** tab (under the **User Defined Columns** section) has the following columns:

- **Name**
- **Data Source**
- **Label**

The following explains each column.

Name

- This is a list of predefined columns, each column titled User Defined Column and numbered from 1 to 20.

The Analytic field name can be the same as the Data Source name. For example, you can map a User Defined Curve to data source named, "Initial Baseline."

Data Source

- The P6 data sources are included under the Single Sources, and the element is included within the parenthesis of the P6 Data Source. For example, Current Baseline (Planned Cost).
- In addition to the predefined list displayed, you can add up to 10 additional mappings for the Cost Sheet data sources.
- You can pick the same data source for multiple fields.

Label

- Labels are required for the User Defined Columns. A red-color asterisk (*/*star symbol) appears for the columns that have been mapped to a data source.

Note

Asterisk (*/*star symbol) does not appear for a column that has not been mapped to a data source.

- For existing mappings of user-defined Cost Sheet columns, the labels are populated based on the data source name.
- Labels support non-ISO characters (UTF-8 characters).
- If there are no labels, the data source names will be sent to Oracle Analytics Server.

Note

Custom String translation is not applied.

- The first time that you select a data source, the label is populated based on the data source name. You can modify the label according to your business need.
- The maximum characters allowed in the label field is 50, same as the Cost Sheet Data Source Name.

Note

The system does not perform Label Uniqueness test.

Data Mapping - Cost Attributes

The **Data Mapping - Cost Attributes** tab contains user-defined Attributes, listed under the **User Defined Attributes** section.

To add a field, select **Add** to open the **Add User Defined Attribute** window. Enter name, source, and label in the following fields:

- **Name**
- **Data Source**
- **Label**

The **Data Type** field is read-only and set as "String" by default. The value in the **Data Type** field determines if the selected field is a Dimension object or a Fact object in Analytics. If the **Data Type** field is "String," then the field is a Dimension object in Analytics.

Note

Only the "String" type field is supported for Cost Code Attributes data mapping in Analytics.

You can add up to 20 String type Data Elements (DEs) from the *Cost Code Attributes Detail Form* as User Defined Attributes.

The **Name** field is a required field and lists User Defined String Field 1 through 20.

- If a name has been selected, for example, User Defined String Field 1, the list does not include User Defined String Field 1 and starts with User Defined String Field 2.
- If an existing name has been deleted, the name will appear in the list.

The **Data Source** field lists Data Elements (DEs) in the *Cost Code Attributes Detail Form*.

Only DEs with the "String" type Data Definitions (DDs) are displayed in the **Data Source** field. The "String" type DDs in the list are:

- Text Box
- Multiple Text Lines
- Pull-Down Menu

- Radio Buttons
- Multi-select Input

The DDs in the **Data Source** field include the DEs, for example, Description (uuu_cost_description). If a DE that has already been added is deleted from the deployed design, only the DE name will be seen.

Unifier populates the **Label** field based on the DE that has been selected in the **Data Source** drop-down list. The **Label** field is a required and editable field, and it will accept non-ISO characters (UTF-8), to support internationalization.

The maximum allowed length is the same as the DE label, and the system does not check for label name uniqueness.

Analytics Log (Generic Cost Sheet) Setup

Analytics supports reporting and analyses of data from the various cost attributes in the Generic Cost Sheet of Shells with Generic Cost Codes.

① Note

You work with a Generic Cost Sheet in the same way that you work with Cost Sheet (CBS Shells); however, the difference is that the data in the Generic Cost Sheet comes from Generic Shells and sub-shells, but the data for Cost Sheet comes from the CBS Shells.

You can access your Generic Cost Sheet from the Analytics node (go to the shell tab, and switch to **Admin** mode; in the left Navigator, select **Analytics**, and then select **Generic Cost Sheet**) and map your Analytics fields to the corresponding Generic Cost Sheet columns.

Double-click **Generic Cost Sheet** to open the **Analytics - Generic Cost Sheet Setup** window.

The **Data Mapping** tab (in the **Analytics - Generic Cost Sheet Setup** window) enables you to map the Generic Cost sheet Analytic fields to the corresponding Generic Cost Sheet columns. The **Data Mapping** tab has the following fields:

- Name
- Data Source
- Label

The **Data Source** values are the Single Sources and Logical Sources existing in the Generic Cost Sheets of all the Generic type Shells. You can pick the same data source for multiple fields.

The **Label** field is required field for the user-defined columns. The system supports a total of **40** user-defined columns, for the Generic Cost Sheet.

① Note

An asterisk (*) appears for columns where mapping has been completed. The asterisk (*) does not appear if the column is not mapped to any data source.

The system populates the **Label** column with the Name column for the data source, as set in the Generic Cost sheet column definition. You can modify the values in the Label column, based on your business needs. The Label column supports non-ISO and UTF-8 characters.

The maximum number of characters allowed for this field is 50, same as the maximum number of characters in the Generic Cost Sheet Data Source Name.

Note

- The system does not support Custom String translation.
- The system does not perform label uniqueness verification.

Analytics Log (P6 Summary Sheets)

You can set up Dashboards and Analyses, for P6 Summary Sheets, in Oracle Analytics Server analyses and select the P6 Summary Sheets data that you want to use for analyses.

When you open P6 Summary Sheets in the Analytics node, you will see the Analytics - P6 Summary Sheets Setup window with the following tab: P6 Data Sources.

P6 Data Sources tab

The P6 Data Sources tab allows you to select the P6 Data Sources that you want to use in Analytics (P6 Data Sources for Analytics).

Use the Add or Remove buttons to add or remove the P6 Data Sources that you want to use in Analytics.

To add P6 Data Sources for Analytics:

Select **Add** to open the Select P6 Data Sources for Analytics window and select a P6 data source for Analytics. The following data sources are available to select:

Note

The P6 Data Sources that need to send data to Oracle Analytics Server are set up here.

- Current Schedule
- Customer Sign-Off Baseline
- Initial Planning Baseline
- Management Sign-Off Baseline
- New P6 Data Source for Analytics Testing
- P6 Testing datasource

These are all the published P6 data sources defined under Standards & Libraries.

When finished, select **Apply** and then **OK**.

You can select more than one data source. To select more than one data source, select one source, select OK, and select to add additional data sources.

Note

After you add a data source, that data source will not be shown in the Select P6 Data Sources for Analytics window.

Additional information

- You can use the P6 Summary Sheets that are included in the following types of Unifier CBS Shells for Analytics:
 - Duration
 - Resource loaded
 - Cost loaded

Note

The P6 Summary Sheets for the above data sources will send data to Analytics.

- If fields overlap between the CBS Shells and the existing P6 Summary Sheets, the system-defined fields in the P6 Summary Sheets will be used.

Example:

Planned Start and Planned Finish are mapped fields in Unifier CBS Shells; however, these fields will be replaced by the system-defined fields in the P6 Summary Sheets.

- Data analysis can be performed on P6-Unifier integrated data. Since there is no user interface (UI) component for the P6 Summary Sheets, when Unifier sends data to Oracle Analytics Server, the details of the P6 Summary Sheets of the selected P6 data source is sent to Analytics. In Analytics, views are created based on the details of the P6 Summary Sheets and the user can see the daily-level data.

Analytics Log (Shells)

You can set up Dashboards and Analyses, for Unifier Shells, in Oracle Analytics Server analyses and select the Shell data that you want to use for analyses.

When you open a Shell in the Analytics node, you will see the Analytics - Shells Setup window with one tab:

Data Mapping.

The Data Mapping tab is divided into two sections:

- System defined and User defined attributes
- User Defined Columns

The system defined columns of the Data Mapping tab allows you to map the Shells (called "Projects" in Analytics) Analytic fields to a corresponding Shell attribute Data Element (DE) defined in Unifier.

The top section of the Data Mapping tab displays all the system defined fields in the following columns:

- Name
- Data Source

Name

Lists a series of predefined, read-only fields, which represent the fields used in Oracle Analytics Server.

Note

When the user adds a new user-defined field on a Shell mapping page, the "Name" field displays fields up to 100 (minus the ones used already).

- Shell Phase
- Anticipated Start
- Anticipated Finish
- Start
- Finish
- Forecast Start Date
- Forecast Finish Date
- Planned Start
- Planned Finish
- Scheduled Finish
- Current Budget
- Original Budget
- Proposed Budget
- Address 1
- Address 2
- City
- State
- State Code
- Country
- Country Code
- Postal code

Data Source

- Lists all the Data Elements (DEs), in the Shell attributes, with matching Data Definitions (DDs).
- The DEs are listed in alphabetical order.
- The values listed in the drop-down list have a matching DD as in the Name field and includes a consolidated list of all the DEs across all Shell Attribute Forms. For example, when you select the "Project Start Date," the drop-down list will include all the date fields in all the Shell Attribute Forms.

The bottom section of the Analytics - Shells Setup window includes the User Defined attributes/fields presented in the following columns:

- Name
- Data Type
- Data Source
- Label

Use the Add, Modify, and Remove to add, modify, or remove user defined attributes.

To modify a user-defined attribute, select the attribute, select **Modify**, and modify the fields.

To remove a user-defined attribute, select the attribute, select **Remove**, and modify the fields.

Note

If you remove a user-defined attribute, the DE name will remain in the list for future use.

To add a user-defined attribute, read the following information:

When you select **Add**, the Add User Defined Attribute window opens. This window allows you to select the following required fields:

- Data Type
- Name
- Data Source
- Label

Note

- The Label field is populated based on the Data Element that you have selected from the Data Source drop-down list.
- The Label field is editable and required. You will receive an error message if you leave the Label field blank.
- If you notice that the value in the Label field has changed, it means that other fields have been updated at one point.

The Data Type that you select impacts the Name and the Data Source of the user-defined attribute. The **Data Type** field allows you to select the following attributes, only:

- String (default)
- Date
- Numeric

For example, if you select **String** as your Data Type, you can:

- Add up to 20 names (User Defined String Fields 1 - 20) as the Name.
- Select from a predefined set of data sources from Data Source drop-down list.

- The content of the Label field will be selected by the system and according to your other selections.

Dimension and Fact

The Data Type that you select corresponds to the Analytics fields as follows:

- If the Data Type that you select is String/Date, your selection corresponds to a Dimension object in Analytics.
- If the Data Type that you select is Numeric, your selection corresponds to a Fact object in Analytics.

Additional Information

Pickers are available for String field mappings for both canned and user defined attributes as follows:

- BP Data Picker
- User Data Picker
- Planning Data Picker
- User Picker
- Location Picker
- P6 Activity Picker
- Auto-update Status Setup Picker

Analytics Log (Space Manager)

You can set up Dashboards and Analyses, for Space Manager, in Oracle Analytics Server analyses and select the Space Manager data that you want to use for analyses.

When you open the **Space Manager** in the **Analytics** node, you will see the **Analytics - Space Manager Setup** window with one tab: **Space Types**.

The **Space Types** tab contains a list of space type names under the **Space Types for Analysis** section. You can add and remove a Space type using the **Add** and **Remove** buttons on this tab and below the **Space Types for Analysis** section. When finished, select **Apply** and **Ok** to complete the operation.

Adding Space Types

To add Space Types, select **Add** to open the **Select Space Types for Analytics** window. If available, a list of available Space Types that have been deployed in the Company appear in the window, in alphabetical order. The list contains all Active and Inactive Space Types.

Select one, or more, Space Types.

Select **OK** to add the selected Space Types to the Space Types log.

Once added:

- The selected Space Types do not appear in the Select Space Types for Analytics window.
- The Data Mapping - Space Types tab appear.

Select **Apply** to complete the adding operation.

Removing Space Types

You can remove the Space Types that have been published for Analytics. To remove the Space Types, select one or more Space Types, and select **Remove**. Once removed: The selected Space Types do not appear in the Select Space Types for Analytics window.

If you want to add removed Space Types, read the preceding instructions in **Adding Space Types**.

Working with Space Types

If you (Company Administrator) inactivate a space type, and the inactivated space type was used for Analytics, the inactivated space type remains in the Space Types tab.

If a published space type is removed from the Space Types tab, the data that exists in Analytics (for the removed space type) remains as is.

Note

Added new data will not be published.

If an unpublished space type is removed from the Space Types tab, no information related to the space type, and Level, is sent to Analytics.

The following sections explain the following tabs that appear after you add Space Types:

- Data Mapping - Space Types tab
- Data Mapping - Level tab

Data Mapping - Space Types Tab

The **Data Mapping - Space Types** tab appears after you add **Space Types**, and it enables you to add custom fields, from various Space Types, to use in Analytics. You can use this tab to map the Analytics field to the corresponding **Space Types** field. The **Data Mapping - Space Types** tab contains a list of user-defined attributes under the **User Defined Attributes** section. The **User Defined Attributes** section is a log that lists the following fields for each user-defined attribute:

- **Name**
- **Data Type**
- **Data Source**
- **Label**

All the fields mentioned above are read-only fields. You can add, modify, and remove user-defined attributes using the **Add**, **Modify**, and **Remove** buttons on this tab.

Adding user-defined fields

To add user-defined fields, select **Add** to open the **Add User Defined Attribute** window and enter values in the following required fields:

- **Data Type**
- **Name**

- **Data Source**
- **Label**

About Data Type

The values for Data Type field are:

- *String*
- *Date*
- *Numeric*

When you select a Data Type, you set the value of the of the field as either a **Dimension** or a **Fact**. If you select the Data Type as **String**, or **Timestamp**, the field will be a **Dimension** object in Analytics. If you select the Data Type as **Numeric**, the field will be a **Fact** object in Analytics.

Data Type	Analytics
<i>String</i>	Dimension
<i>Date</i>	Dimension
<i>Numeric</i>	Fact

Adding user-defined fields (custom fields) for Data Type: String

If you select the Data Type as **String**, up to 20 String type Data Elements can be added from the Space Detail Form, as user-defined attributes.

To add user-defined fields (custom fields) for **String** Data Type, select **Add** to open the **User Defined Attribute** window and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined String Field 1" to "User Defined String Field 20." If a name has already been selected, the name is not listed in the Name drop-down list.

Example

If the "Department" field has been added as a "User Defined String Field 1," then the "Name" drop-down list does not display the "User Defined String Field 1."

If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

The **Data Source** drop-down list contains a list of Data Elements from the Space Detail Form.

If you select the Data Type as **String**, the Data Elements in the Data Source drop-down list are:

- Strings and Integer Pull Downs
- Integer and String Radio Buttons
- Check Boxes
- Test Data Elements

There are no Pickers listed/available. The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name).

For example, Project Type(prjt_type). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support internationalization. The maximum allowed length is similar to Data Element label. The system does not perform a label uniqueness verification.

Adding user-defined fields (custom fields) for Data Type: Date

If you select the Data Type as **Date**, up to 10 "Date" Data Elements can be added from the Space Detail Form, as user-defined attributes.

To add user-defined fields (custom fields) for **Date** Data Type, select **Add** to open the **User Defined Attribute** window, and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined Date Field 1" to "User Defined Date Field 20." If a name has already been selected, the name is not listed in the Name drop-down list.

Example

If the "Project Commission Date" field has been added as a "User Defined Date Field 1," then the "Name" drop-down list does not display the "User Defined Date Field 1."

If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

If you select the Data Type as **Date**, the Data Elements in the Data Source drop-down list are:

- Date
- Date only Picker

The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name). For example, Project Archive Date(prjt_arc_date). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support internationalization. The system does not perform a label uniqueness verification.

Adding user-defined fields (custom fields) for Data Type: Numeric

If you select the Data Type as **Numeric**, up to 40 numeric data elements can be added from the Level Detail Form, as user-defined attributes.

To add new user-defined fields (custom fields) for **Numeric** Data Type, select **Add** to open the **User Defined Attribute** window, and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined Date Field 1" to "User Defined Date Field 40." If a name has already been selected, the name is not listed in the Name drop-

down list. For example, if the "Total Count" field has been added as a "User Defined Date Field 1," then the Name drop-down list does not display "User Defined Date Field 1." If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

If you select the Data Type as **Numeric**, the Data Elements in the Data Source drop-down list are the Data Elements found on the Space Detail Forms and are:

- Integer
- Currency
- Decimal Amount

There are no Integer Pull Downs, Integer Radio Buttons, and Integer Check Boxes. The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name). For example, Contract Amount (con_amt). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support internationalization. The maximum allowed length is similar to Data Element label. The system does not perform a label uniqueness verification.

Data Mapping - Level Tab

The **Data Mapping - Level** tab appears after you add **Space Types**, and it enables you to add custom level/floor fields, from various Levels, to use in Analytics. You can use this tab to map the Analytics field to the corresponding **Levels** field.

The **Data Mapping - Level** tab contains a list of user-defined attributes under the **User Defined Attributes** section. The **User Defined Attributes** section is a log that lists the following fields for each user-defined attribute:

- **Name**
- **Data Type**
- **Data Source**
- **Label**

All the fields mentioned above are read-only fields. You can add, modify, and remove user-defined attributes using the **Add**, **Modify**, and **Remove** buttons on this tab.

Adding user-defined fields

To add user-defined fields, select **Add** to open the **Add User Defined Attribute** window and enter values in the following required fields:

- **Data Type**
- **Name**
- **Data Source**
- **Label**

About Data Type

The values for Data Type field are:

- *String*
- *Date*
- *Numeric*

When you select a Data Type, you set the value of the of the field as either a **Dimension** or a **Fact**. If you select the Data Type as **String**, or **Timestamp**, the field will be a **Dimension** object in Analytics. If you select the Data Type as **Numeric**, the field will be a **Fact** object in Analytics.

Data Type	Analytics
<i>String</i>	Dimension
<i>Date</i>	Dimension
<i>Numeric</i>	Fact

Adding user-defined fields (custom fields) for Data Type: String

If you select the Data Type as **String**, up to 20 String type Data Elements can be added from the *Level Detail Form*, as user-defined attributes.

To add user-defined fields (custom fields) for **String** Data Type, select **Add** to open the **User Defined Attribute** window and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined String Field 1" to "User Defined String Field 15." If a name has already been selected, the name is not listed in the Name drop-down list. For example, if the "Department" field has been added as a "User Defined String Field 1," then the Name drop-down list does not display "User Defined String Field 1." If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

The **Data Source** drop-down list contains a list of Data Elements from the *Level Detail Form*.

If you select the Data Type as **String**, the Data Elements in the Data Source drop-down list are:

- Strings and Integer Pull Downs
- Integer and String Radio Buttons
- Check Boxes
- Test Data Elements

There are no Pickers listed/available. The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name). For example, Project Type(prjt_type). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support

internationalization. The maximum allowed length is similar to Data Element label. The system does not perform a label uniqueness verification.

Adding user-defined fields (custom fields) for Data Type: Date

If you select the Data Type as **Date**, up to 10 "Date" Data Elements can be added from the *Level Detail Form*, as user-defined attributes.

To add user-defined fields (custom fields) for **Date** Data Type, select **Add** to open the **User Defined Attribute** window and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined Date Field 1" to "User Defined Date Field 10." If a name has already been selected, the name is not listed in the Name drop-down list. For example, if the "Project Commission Date" field has been added as a "User Defined Date Field 1," then the Name drop-down list does not display "User Defined Date Field 1." If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

The **Data Source** drop-down list contains a list of Data Elements from the *Level Detail Form*.

If you select the Data Type as **Date**, the Data Elements in the Data Source drop-down list are:

- Date
- Date only Picker

The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name). For example, Project Archive Date(prjt_arc_date). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support internationalization. The system does not perform a label uniqueness verification.

Adding user-defined fields (custom fields) for Data Type: Numeric

If you select the Data Type as **Numeric**, up to 30 numeric data elements can be added from the *Space Detail Form*, as user-defined attributes.

To add user-defined fields (custom fields) for **Numeric** Data Type, select **Add** to open the **User Defined Attribute** window and enter values in the following required fields:

Name

The **Name** drop-down list contains values from "User Defined Date Field 1" to "User Defined Date Field 30." If a name has already been selected, the name is not listed in the Name drop-down list. For example, if the "# of Spaces" field has been added as a "User Defined Date Field 1," then the Name drop-down list does not display "User Defined Date Field 1." If a previously added field has been deleted, that Name is displayed in the Name drop-down list.

Data Source

If you select the Data Type as **Numeric**, the Data Elements in the Data Source drop-down list are the Data Elements found on the *Level Detail Forms* and are:

- Integer

- Currency
- Decimal Amount

There are no Integer Pull Downs, Integer Radio Buttons, and Integer Check Boxes. The Data Source field displays a series of interconnected Data Element names and Data Element labels in the following format: DE Label(DE name). For example, Contract Amount (con_amt). If a previously added Data Element is deleted from the Deployed design, only the Data Element name is displayed.

Label

The **Label** field is populated based on the Data Element that you select in the Data Source. You can only modify the value of this field with non-ISO characters (UTF-8) to support internationalization. The maximum allowed length is similar to Data Element label. The system does not perform a label uniqueness verification.

Analytics Log (Vendors)

You can set up Dashboards and Analyses, for Unifier Vendors data, in Oracle Analytics Server analyses.

When you open a Vendors record in the Analytics node, you will see the Analytics - Vendors Setup window that contains the following tabs, after you add a Vendor record and select Apply:

- Vendors tab
- Data Mapping tab

Vendors tab

Note

You must first select the Business Processes that you want to set as Vendor Business Processes for use in Analytics.

In the Vendors tab, select **Add** to open the Select a Business Process as Vendor for Analytics window. The list of Business Processes in this window is in alphabetical order.

Note

Only one Business Process can be marked as Vendor, so the Add option is disabled after your selection.

Select a Business Process (Company and Shell level - Active and Inactive), and then select **OK**. You can only select one Business Process.

You can remove a Vendor Business Process by selecting the item and selecting Remove.

Use the Vendors tab to select the Vendors names that you want to use in Analytics. Once selected, you can use Add to add the name or Remove to remove a Vendor.

You can remove a Vendor Business Process that is published for Analytics. To remove an item for use in Analytics, select the item from the list in the Select a Business Process as Vendor for

Analytics window, and select **Remove**. You can add a removed item for Analytics reporting. Select **Add** if you want to add a removed item to the list.

If the Company Administrator inactivates a Business Process marked as Vendor, and if the item is used for Analytics, this Vendor Business Process remains in the Vendors tab.

If a Vendor is removed from the Vendors tab, data that exists in Analytics (for the removed Vendor Business Process) remains as is; however, the new data will not be published.

Data Mapping tab

The Data Mapping tab allows you to map the predefined Analytic Vendor related fields to a corresponding Data Element (DE) in the Business Process. As mentioned earlier, this tab is available after you have added a Business Process in the Vendors tab and selected Apply or OK.

In the Data Mapping tab, the following columns, or fields, are present:

- Name
- Source
- Data Source

Name

Pre-populated and represents the fields used in Oracle Analytics Server. These are read-only fields and you cannot modify them.

Source

Displays the location of the Data Element (DE) seen in the Data Source. The DEs for Vendor mapping are the Upper form DEs.

Data Source

Allows you to select from a list of all Upper form DEs, for the selected Vendor Business Process in the Vendors tab. The list is filtered based on the Data Definition (DD) match. You can change the mapping of the fields.

The following is a list of fields that need mapping for Vendors:

- Vendor ID
- Name
- Type

The fields displayed in the Data Source drop-down list is a concatenation of DE Label and DE Name, and the DE Name is displayed within parentheses. For example, Department(contract_department)

Rules for Data Mapping

- If the Analytic field is of a String type, all pull-downs (Integer and String), Radio Boxes (Integer and String), checkboxes, and text DEs are displayed. No pickers will be seen.
- If the Analytic field is of a Pull-down type, the list of DEs displayed in the Data Source drop-down list is filtered and only the DEs of Pull-down type are displayed. This list includes both Integer and String Pull-downs.
- If the Analytic field is of a Numeric type, the list of values displayed is a consolidated list of all numeric data elements, which include DEs of type Integer Amount, Currency Amount, and Decimal Amount. No integer pull-downs or Radio boxes will be seen.

Scheduling Setup

Unifier sends data from all Shells, regardless of the Shell status. If you need to filter the data based on the Shell status, you (the Administrator responsible for setting up the Analytics Schedule) must set up filter conditions on the data and set up a schedule to send the data to Oracle Analytics Server.

You can set up Scheduling by selecting the Schedule (on the log toolbar). The Schedule Setup window allows you to set the following:

- **Frequency**
- **Filters**

Note

If you change the filter setup, the change only applies to the subsequent runs. Since the scheduled runs send incremental data (Data that has changed between runs) only, the filter change is applicable to the sent incremental data.

The default option is: Include data from all Shells.

If you select to set up a filter to include data from Shells with a particular status (Include data from Shells with Statuses), the system provides the following Shell statuses:

- Active
- On-Hold
- View Only
- Inactive

You can also exclude data. Include the Shell that you want its data to be excluded (Exclude data from selected Shells) to prevent the data in that Shell from being sent to Oracle Analytics Server.

- **Data Refresh**
If you made changes to data mappings and data definitions and want the system to apply your filtering to the existing data in Oracle Analytics Server, select **Refresh all data**.
- **Additional Information**
In the **Send error notification to** field, specify who must receive the error notifications. Notifications are emails that contain failure of data exchange between Unifier and Analytics server. The Administrator can set up Users and Groups to receive these notifications.

Unifier sends data to Analytics periodically. To accommodate your business needs, the following additional granularity, for sending the data, is available.

A user can send data to Oracle Analytics Server every 4, 6, 8, or 12 hours so that the dashboards and reports in Analytics get the latest data. You can set up Scheduling by selecting the **Schedule** (on the log toolbar). The **Schedule Setup** window allows you to set the **Frequency**. Furthermore, you can update the **Publish at** values according to the frequency.

In addition, since the Company-level data that is seen in Analytics is determined by permissions (see [Granting Permissions to Set up Analytics](#)), user permissions impact the data that is being available to the users. An administrator can set permissions in terms of who can

view the *Company-level* information from the respective level Business Processes that are enabled for Analytics.

The **Run Now** option (toolbar), in the Analytics setup page, enables the admin to run the data publish at-will, for Analytics.

Upon selecting the **Run Now** option, Unifier displays the following message: "This action will only publish the Unifier data for Analytics and will not update the data seen in Dashboards and Analyses. You must run Analytics ETL to update them. Do you want to proceed?"

This option is available for the users only if the **Modify** permission has been granted.

When the job of data publish is already running based on the schedule setup, an alert is displayed to inform the user that the job for data publish is already in progress: "Unifier data is already being published based on the schedule. You must wait for this to be complete before performing this action."

Access Control Changes for Analytics Node in User Mode Access

Use this access control to:

- Give permission to view or visit analytics or Oracle Analytics Server at the company or shell levels
- Provide data level access for analytics or Oracle Analytics Server dashboards

Company Workspace

1. In **Access Control**, expand **User Mode Access**, expand **Company Workspace**, expand **Non-navigational Nodes**, and then select **Analytics**.
2. Assign permissions.

The View option is the only permission option available for Analytics node.

When users have view permissions at Company Workspace level, the users can see the executive dashboard tab and the "Analytics" link, after opening the tab.

Project/Shell tabs

1. In **Access Control**, expand **User Mode Access**, expand **Projects/Shells**, expand **Non-navigational Nodes**, and then select **Analytics**.
2. Assign permissions.

The administrator can assign permissions to both users and groups.

Analytics Subject Areas and Unifier Data

Analytics subject areas use the following Unifier data:

- Generic cost sheet
- P6 Summary Sheets
- Shells
- Space Manager
- Vendors
- Business Processes

Analytics uses this subject area to analyze cost and non-cost line items in business processes.

- **Business Process History**
Analytics uses this subject area to analyze weekly historical business process facts to better understand changes over time. Note that dimensional business process history is not supported.
- **Cash Flow**
Analytics uses this subject area to analyze CBS-level cash flows. You can map columns to predefined company-level cash flow curves. Five generic columns are included to support custom labels from Unifier. Any Cash Flow families will be designated in Unifier (based on Cash Flow 'Name' value).
- **Cash Flow History**
Analytics uses this subject area to analyze weekly historical cash flow facts to better understand changes over time. Note that dimensional cash flow history is not supported.
- **Cost Sheet**
Analytics uses this subject area to analyze cost sheets. You can map your data source to a predefined list of cost sheet columns. Ten generic columns are included to support custom labels from Unifier.
- **Cost Sheet History**
Analytics uses this subject area to analyze weekly historical cost sheet facts to better understand changes over time.

Note

Dimensional cost sheet history is not supported.

Granting Permissions to Set Up Analytics

To initially set up the Unifier Analytics node, permissions must be enabled in the Admin and User modes.

To grant permission for Analytics (Administration Mode Access):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Integrations**, and then select **Analytics**. The **Permission Settings for: Analytics** window opens. Here you can add, modify, or remove permission settings.
4. Select **Add** to open a new **Permission Settings for: Analytics** window.
5. Select **Add Users/Groups**. The **Users/Group Picker** window opens.
6. Select the intended users or groups, and select **Add**.
7. Select **OK** to return to the Permission Settings window.
8. Select the users or groups in Select Users/Groups, located in the upper portion of the window, and select the appropriate level of access for the user or group in Permissions Settings, located in the lower portion of the window.

View: This option allows users and groups to open and view the contents in **Analytics** node. Users with View permission cannot make any changes.

Modify: This option allows users and groups to configure and modify the data required for Analytics. This setting includes View permission. Users are also able to set schedule for publishing data, for various areas in Unifier, to the Oracle Analytics Server.

9. Select **OK**.
10. Select **Apply** to save changes and keep the window open, or select **OK** to save changes and close the window.

To grant permission for Unifier data in Analytics (User Mode Access):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Company Workspace**, expand **Non-navigational Nodes**, and then select **Analytics**.
4. In the **Permission Settings for: Analytics** dialog box, select **Add** to open a new **Permission Settings for: Analytics** window.
5. Select **Add Users/Groups**. The **Users/Group Picker** window opens.
6. Select the intended users or groups, and select **Add**.
7. Select **OK** to return to the Permission Settings window.
8. Select the users or groups in Select Users/Groups, located in the upper portion of the window, and select the appropriate level of access for the user or group in Permissions Settings, located in the lower portion of the window.

View All Records: This option allows users and groups to open and view Company level Business process data and all the available project level data in Analytics. Users with **View All Records** permission cannot make any changes.

View All Company Records: This option allows users and groups to open and view only the *Company-level* information from the respective level Business Processes that are enabled for Analytics. Users with **View All Company Records** permission cannot make any changes.

View All Shell Records: This option allows users and groups to open and view all the available/mapped shell level data in Analytics, like Cost, Cashflow, and so on. Users with **View All Shell Records** permission cannot make any changes.

Note

For existing users, the first checkbox option (View All Records) is automatically selected, after upgrade.

Analytics and Dashboards

Each of the following dashboards has filter selections, or prompts, to help you narrow the results in the sections by the date, project, location, and so on.

- **Business Process**
The Business Processes dashboard enables you to view business process data, including business process overview analyses, business process data by geographic location, and business process history analyses.
- **Cash Flow**

The Cash Flow dashboard enables you to view cash flow data, including comparisons of actuals vs. forecast and forecast vs. baseline, cash flow data by geographic location, and cash flow history analyses.

- **Cost Sheet**
The Cost Sheet dashboard enables you to view cost data, including a comparison of original and revised budget details, and cost history analyses.

To access the Analytics node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Analytics**.

Accessing the Unifier Analytics Dashboard in Oracle Analytics Server

Users can access the Unifier Analytics dashboard designed in Oracle Analytics Server platform by using the provided link.

With Single Sign On (SSO)

When accessing the Unifier Analytics dashboard *with Single Sign On (SSO) enabled*, you navigate directly from Unifier to the Oracle Analytics Server platform.

If a user goes to the Oracle Analytics Server landing page, the accessibility of the landing page, dashboards, analyses, and so forth are controlled by the settings for the user that is logged in Oracle Analytics Server.

If a Shell analytics user cannot go to the corresponding dashboard, the system will take the user to the default landing page set in Oracle Analytics Server.

Without Single Sign On (SSO)

To access the Unifier Analytics dashboard *without Single Sign On (SSO) enabled*, you must log on to the Oracle Analytics Server.

Accessing Unifier from Oracle Analytics Server

You can access Unifier from Oracle Analytics Server by way of Action Links. Action Links are a way of providing easy and seamless navigation from an Analysis to other local content (such as other Analyses or Dashboards) or external content (such as websites). The Action Links in Analytics allows you to view the data in Unifier.

Action Links (from Oracle Analytics Server to Unifier)

The following is a list of available Action Links:

- Link to BP Log
- Link to BP Record
- Link to Cash Flow log
- Link to Cost Sheet log
- Link to Shell landing page
- Link to P6 Summary Sheet log

- Link to Spaces log (Space Manager)
- Link to Level log (Space Manager)

With Single Sign On (SSO)

When accessing from Oracle Analytics Server *with Single Sign On (SSO) enabled*, you must have appropriate permission to access a particular page, and pertinent navigation, in Unifier. For example, if you want to access a Cost Sheet using the Cost Sheet Action Link, you must have permission to access that particular Cost Sheet, for the selected project (Project Cost Sheet).

If you do not have permission to a Unifier page that is linked to an Action Link, the system will take you to the default landing page.

Without Single Sign On (SSO)

To access the Unifier Analytics dashboard *without Single Sign On (SSO) enabled*, when using an Action Link, you must log on to the Oracle Analytics Server and enter your credentials.

If a session is already in progress and you select an Action Link, the system will take you directly to the Unifier page.

Users must have appropriate permission to access a particular page, and pertinent navigation, in Unifier. For example, if you want to access a Cost Sheet using the Cost Sheet Action Link, you must have permission to access that particular Cost Sheet, for the selected project (Project Cost Sheet).

If you do not have permission to a Unifier page that is linked to an Action Link, the system will take you to the default landing page.

About Link to BP Record

With Single Sign On (SSO) enabled, if you select the Link to BP Record (Action Link), you can launch the Unifier application and open the Business Process Record, provided that you have the appropriate permissions to the Business Process record. If you do not have the required permissions to the Business Process record, the system will take you to the Business Process Log.

Without Single Sign On (SSO) enabled, if you select the Link to BP Record (Action Link), the system displays the Sign In page or landing page (depending on whether the session is expired or not). If you select the Link to BP Record (Action Link), you can launch the Unifier application and open the Business Process Record, provided that you have the appropriate permissions to the Business Process record. If you do not have the required permissions to the Business Process record, the system will take you to the Business Process Log.

Accessing Analytics from Unifier

You can access Analytics from the following places in Unifier:

Company-level dashboards

The company level access is typically provided to executive level users who want to view the Analytics dashboards at a Company level. These users will be able to access data from all Shells.

Dashboards

You can access the executive Analytics Dashboards by selecting the Analytic Dashboards icon. Selecting the Analytic Dashboards icon, on the top left corner of the screen, allows you to open the Analytic Dashboards in Oracle Analytics Server.

The Analytic Dashboards icon can be seen by users who have access to Company level Analytics (see [Access Control Changes for Analytics Node in User Mode Access](#)).

Shell-level dashboards

The Shell members can configure Shell dashboards.

In the Source Details section of the Edit Dashboard window, the Analytics option for the Block Type supports Analytics for Shell details.

Any user with the Edit Dashboard permissions can add the Analytics option for the Block Type.

Publishing Unifier Data to Analytics

You must send Unifier data to Analytics periodically on an incremental basis. To send data to analytics, you will need to:

1. Publish Unifier data to staging tables
2. Run ETL Using the Primavera Analytics Administration Web Application to send data to the STAR schema of Primavera Data Warehouse.
For more information on using the Primavera Analytics Administration Web Application, see the *Primavera Analytics Cloud Service Administration Guide*.

You can set the frequency of sending data to Analytics to Oracle Analytics Server, by using the **Schedule** option from the toolbar.

Note

If you need location-specific details for Spatial Data in Analytics, ensure that the values for Country and State Data Elements (DEs) are according to the ISO standards. These values can be pull-downs or plain text fields.

Schedule Setup

The frequency for the data publication can be Daily, Weekly or None. The default value is **Daily**.

You can set the frequency to **Every** __ hours, **Daily**, **Weekly**, or **None**.

The default frequency is **Daily**.

If you select **Weekly**, the system sets the day to Sunday. You can change the day.

If you select **None**, there will be no periodic publication of Unifier data to Analytics.

You can set the time for the publication of data.

You must set the time format to 24-hour notation in the form hh:mm, for the publication of data. The **Hour** drop-down lists hours from 0 to 23 for hour and 0 to 59 for minute. The default option for time is set to 00:00. The system displays the server time zone after the minute.

You must select the checkbox for the **Data Refresh** option if you made changes to the DD value or labels. By default, the checkbox is unchecked.

You must select the checkbox for the **Data Refresh** option if you made changes to the data mapping fields. After the run is complete, the system resets the checkbox for the **Data Refresh** option and the checkbox will be unchecked.

Mapping Linked Elements

The linked elements can be mapped to Analytics fields. The values of linked elements from the source are rendered at run-time in the destination record. However, if there are any changes to the value of the linked elements in the source record, you must conduct a full refresh of data for Analytics to display these values. As a result, you must select **Refresh All data** for this purpose.

Run History

The **Run History** option allows you to see the status of the scheduled runs of the Unifier data publication to the Analytics server. When you select the **Run History** option, by selecting **Run History** from the toolbar, the Run History window opens and displays the following information:

- **Requestor:** Is always "System"
- **Submit Date:** The date entered by user
- **Start Date:** The date entered by user
- **End Date:** The date entered by user
- **Status:** The run status

You can view the Run History details by opening a record in the Run History log.

The history details window includes the Start Date, End Date, and a message.

- Success message: *Data was sent to Analytics, successfully.*
- Failure message: For example, *An error occurred and data was not published to Analytics successfully. Contact System Administrator.* The system then displays the actual error after the generic failure message.

Unifier Configurator and Oracle Analytics Server for On-Premises

The Unifier Configurator has an additional option for users to enter the URL to the Oracle Analytics Server. Refer to the *Unifier Installation Guide for On-Premises* for details.

Analytics Block

The following provides detailed information about the Analytics Block window:

- **Block Title:** This field contains the title of the Analytics Block.
- **Name:** This field contains the name (as a hyperlink) of the Analytics Block.
- **URL:** This field contains the URL, entered by the user, and it must match the URL specified in the **Unifier Configurator**.

Note

The URL protocol, server path, and port must all match; otherwise, the validation fails.

Example

If the URL is: `http://slc44.us.oracle.com:7001/analytics`, the Analytics URL must be: `http://slc44.us.oracle.com:7001/analytics`.

Note

The system does not validate the other URL parameters, for example, the Dashboard name.

When you post the Analytics Block, it appears in the Source Details log and provides the following information:

- Block Title: Title entered by the user.
- Source Name: Same as the name entered in the Name field.
- Block Type: Analytics
- Result Type: Blank
- Display Type: Blank

The Analytics Block is also displayed in the Shell landing page. In the Unifier Analytics pane, you can select Analytics Dashboards to go to the shell dashboard in the Analytics server.

If a user does not have permissions to access the Shell dashboards defined in the Oracle Analytics Server, the link is disabled and displays as plain text.

You can add Analytics block to "My Dashboards." However, the link connecting Unifier to the Analytics server, from this "My Dashboards" is completely driven by the Access Control (see [Access Control Changes for Analytics Node in User Mode Access](#)).

Analytics Block and Shell Templates

The Analytics Block that is defined in the Shell dashboard of the Shell templates can be pushed to Shell instances.

Unifier and Primavera P6

Unifier receives the integrated data, from P6, and uses the data for the following **Cost** modules:

- Cost Sheet
- Cash Flow
- Earned Value (EV)

As a part of integration, you can capture the "summarized" P6 data within the Cost modules and view the information in a columnar and comparative format, for example, Cost Sheet columns, Cash Flow Curves, and Earned Value Curves). In addition, the Reporting functionality enables you to create "User-Defined" or "Custom" reports using the "summarized" P6 data.

Prerequisites for a Successful Integration

- Use CBS type Shells to use Unifier cost modules with data integrated from P6.
- Use the system Data Element `uuu_int_schedule_type` within the Integration section and Detail subsection of the Shell Attribute Form definition.
- Create and Publish P6 Data Sources to pull P6 data into Cost Sheet.
- Create Shell instances corresponding to each P6 Schedule that needs to be integrated with Unifier by following these instructions:
 - Each Shell instance must have the same 'Shell Number' as the corresponding P6 Project ID.
 - To bring the P6 internal Project id to Unifier, add the P6 Internal Project ID field (`uuu_int_internal_proj_id`) to the attribute form and the Integration Detail form (go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select uDesigner, and then select Shell Manager; open the applicable shell, select Integration, and then select Detail).
 - Create or use separate Shell Templates for Duration Based and Resource or Cost Loaded integrated Shells in Unifier because the Cost Sheet for Duration Based schedules will not contain columns rolling up from P6 Summary Sheets (when the other two types of schedules will have columns rolling up from P6 Summary Sheets).
- Include the following in the Role Attribute Form, if the integration will be Resource or Cost Loaded:
 - `uuu_role_imported_from_p6`
 - `uuu_role_type`, `uuu_role_id`
 - `uuu_role_uom`
- For correct cost calculations in Resource Loaded schedules, update all imported roles with Rate values.
- If you create Unifier Roles via integration, include the Roles above the Data Elements (DEs) in the integration detail section in uDesigner Role attribute design.
- For Resource Loaded or Cost Loaded schedules:
 - (Recommended) Do not change or update the ID of Roles created via integration manually because when you create Roles via integration the Role ID is used as the identifier by means of which the integration interface maps the P6 Resource to Unifier Role.
- If you want to integrate the CBS codes with P6, do the following:
 - Include `uuu_cost_imported_from_p6` and `uuu_int_hidden_from_p6` in the CBS Attribute Form.
 - Define the default CBS segment values within Data Structure Setup (go to the Company Workspace tab, switch to Admin mode, select Data Definitions from the left Navigator, and then select Cost Codes).
- If you want to create Cost Codes for a Shell using the P6 CBS structure, ensure that the Cost Sheet structure in P6 is Tree.

- Do not include Cost Code separators ("-", ".") in P6 CBS Codes if you are creating Cost Codes in Unifier using P6 data.
- When working with P6 data sources or Cost Sheet columns:
 - You can create or publish P6 data sources via integration and when the "Send Summary data" integration is used.
 - You can add published P6 data sources, as columns, only in Cost Sheet Templates.
 - If you create P6 data sources via integration, and not manually, you can add columns to Cost Sheet only after the "Send Summary data to Unifier" is used.
 - If you create P6 data sources manually, and not via integration, create or publish P6 data sources by:
 - * Creating or publishing one P6 Data Source called "Current Schedule." This data source is used by the system to define the "Type" of all Master Summary sheets (Summary sheets which contain summary data from the main P6 project which is integrated with Unifier).
 - * Creating or publishing all "Baseline Type" values defined within P6 Enterprise Data as P6 Data Sources.

After you create or publish the P6 data sources, you can use the P6 data sources to create columns in the Cost Sheet Template and push the information to the Shell instances.

P6 Data Sources Node

The **P6 Data Sources** node is located under the **Standards & Libraries** node. The **P6 Data Sources** node enables you to access the following information, based on your permissions:

- Data source
Captured from P6 Summary Sheets, for use in Cost Sheets or Cost Sheets Templates.
Examples of P6 Data Sources: Current Schedule Summary, Original Baseline Summary, Sanctioned Baseline Summary
- Dataset for the attribute "Type" for P6 Summary Sheets

Note

Unifier allows a maximum of 12 P6 Data Sources to be integrated, with Current Schedule as one of the 12 P6 Data Sources must be named.

P6 Data Sources Permissions

The P6 Data Sources node appears under the Standards & Libraries node, when in Admin mode. The following permissions are available for the P6 Data Sources:

- Create
Users with Create permission have full access to the P6 Data Sources node and is allowed to create data sources, modify existing data sources, and delete and view all data sources.
If a user has "Create" permission, the remaining two permissions are enabled automatically.
- Delete/Modify
User with Delete/Modify permission will not be able to Create data sources.

If a user has "Delete/Modify" permission, the "View" permission is enabled automatically.

- **View**
User having View Permission will not be able to Create, Modify or Delete, but will only be able to View the different data sources.

P6 Data Sources Log (Main menu)

File

New: To create a new Data Source

Open: To open a Data Source

Note

Data Sources must have unique names.

Edit

Delete: To delete a P6 Data Source

If the P6 Data Source has been published already, you cannot delete it.

Publish: To publish Data Source properties

Note

You cannot edit the name of a Data Source.

View

To find a Data Source.

Help

To access online help and documents.

P6 Data Sources Log (Toolbar menu)

New

To define a new P6 Data Source, using the New window.

Open

To open a defined P6 Data Source.

Delete

To delete an existing Data Source, one record at a time.

Publish

To make the P6 Data Source available to be added as Cost Sheet columns. You can select and Publish more than one Data Source at a time.

Note

After a Data Source is published, it appears as a "single" Data Source within a Cost Sheet or Cost Sheet Template that have the option of "Enable P6 Sources" selected in the properties. Unpublished Data Sources are not available as Cost Sheet "Single" Data Sources.

Find

To find a Data Source

P6 Data Sources Properties Window

- **Name**
Text (maximum 120 characters). This content of this field is from P6 and maps to the P6 Project Name.
- **Description**
Editable field allowing you to enter a description (maximum 500 characters).

P6 Activity Data

If you are using both Unifier and P6, you can link the two applications using Primavera Gateway and send data from a P6 Schedule to Unifier Projects. You can "pick" activities and Auto-populate (AP) or Reverse Auto-populate (RAP) from the corresponding P6 project.

Corresponding P6 Project

The term "Corresponding P6 project" refers to that P6 project which has the:

- Same ID as Unifier Project
or
- Same ID as captured in a system element in Unifier project attributes

Maintaining Projects (Unifier and P6)

Maintain projects between the two applications by ensuring that the:

- ID of the projects match in both applications
or
- System Data Element (DE) (uuu_int_p6_project_id) is present on the Shell Attribute Form, and the value is the same as the corresponding P6 project ID.

If only one of the conditions above is met, the Gateway - Unifier Provider can determine which P6 project corresponds to which Unifier project.

Note

Integration with the P6 application only applies to Unifier CBS type Shell.

P6 Activity Picker Query Configuration

You can query the P6 Activity Picker elements by using the fields associated with the P6 Activity Attribute Form.

To define query conditions for P6 Activity Picker elements, from the same place as Data Picker query conditions in Unifier:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
3. Open the applicable BP.
4. From the toolbar, select **Open**, and select **Data Picker**.

In the **Query Condition** window, you can add query conditions under the **Add Query Condition** section:

- **Data Element**
A drop-down list that contains all the elements (pre-defined or custom) from the P6 Activity Attribute Form. You can use the Data Element to create any query to filter out P6 Schedule activities from the P6 Activity Picker.
- **Condition**
To set conditions for the query.

P6 Data and Cash Flow Templates

You can use a Cash Flow Shell template (Shell instances and Shell templates) to select the Summary Sheets by selecting the associated P6 data sources. As a result, when you use a Cash Flow Shell template to push the Cash Flow settings, the system updates the Shell instance with the Cash Flow settings of the template.

Note

The following applies to both Distribution, Cost, and Schedule sections.

At runtime, the system uses the data from Summary Sheets, associated with the P6 data source, to render the Cash Flow curves.

Distribution and Schedule

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Building**.
3. Open the applicable template.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.

In the Distribution or Schedule sections of the Cash Flow templates (with Detail level CBS), click **Select** from the Use data from P6 Sources option to open the Select Data sources window. This window displays all the data sources listed in the Standards & Libraries.

Note

The Data Type option (under the P6 Source selection option) is a required field, if you select Use data from P6 Sources option. Use the drop-down list in the Data Type field to see a list of all the data types available for the selected P6 data source.

Since the Schedule type will be blank, the Cash Flow template displays all the options available regardless of the Schedule type.

The P6 sources in Distribution, Cost (only for Actuals), and Schedule sections are always enabled in the Cash Flow templates.

The P6 Sources window (source selection) lists all the Published data sources, in alphabetical order. You can select a source name to select that source. To find a source, go to Find, select the drop-down list, and follow the prompts. Depending on the type of the Cash Flow curve, this option is available only if you select the Distribution/Schedule/cost option as Use data/dates from P6 Sources.

The Data type options for the Baseline curves are:

- At Completion
- Planned

The Data type options for the Forecast curves are:

- At Completion
- Remaining

You can copy the Cash Flow curve properties that exist in a Shell template to the Cash Flow curves that exist in instances if:

- The Shell template push is done
- The Shell template is used to create instances

Unifier and Primavera Gateway

Gateway allows data to be moved between two applications (at least one of them is a Primavera application) on schedule or on demand. It is a single integration hub where all the data integration happens with Primavera applications.

For a Unifier object to exchange data with an object in another application via Gateway, the object must be predefined within:

- Unifier Provider
- Gateway
- Oracle application/external application Provider

Additionally, objects within each Provider must have a hard-coded (Java code) link to the corresponding object (with which it exchanges data) in Gateway.

Example

To expose Unifier Project object for integration with another application via Gateway, there must be a:

- Project object defined in Unifier Provider
- Project object defined in Gateway
- Project object defined in Unifier Provider must be hard-coded (Java code) to link to Gateway Project object

Correspondingly, to exchange data with Unifier Project object, the Oracle application/external application Provider must have a Project object within it and that object must be hard coded (via java coding) to link to Gateway Project object.

Unifier Objects and Gateway

Unifier sends data to the Oracle application through Gateway. The following Unifier objects can be integrated with Oracle applications via Gateway:

- **Projects/Shells:** You can create and update Projects in Unifier using project data from an external application via Gateway. The exchange of information is bidirectional, from the Oracle application to Unifier and from Unifier to the Oracle application.
- **Business Processes:** You can create and update Business Process records using data from external applications sent to Unifier via Gateway. The exchange of information is bidirectional, from the Oracle application to Unifier and from Unifier to the Oracle application.
- **Roles:** You can create and update Roles using data sent over from Gateway. The exchange of information is bidirectional, from Oracle application to Unifier and from Unifier to the Oracle application.
- **CBS Codes:** You can create CBS codes, within a Cost Sheet, using data sent over from Gateway. The exchange of information is one-directional, from the Oracle application to Unifier.

Note

Integration with P6 application applies to CBS Shell-type only.

Document exchange support through Gateway

Unifier supports exchanging documents attached to BP records or Line Items through Gateway. In particular, through integration between Unifier and Gateway, Gateway performs as an intermediary and supports:

- Attaching documents to the respective BP records, or Line Items, while importing the documents into Unifier.
- Exporting documents (attached to BP records, or Line Items,) out of Unifier and to any Oracle application which is receiving the BP records or Line Items.

Note

- The Oracle application must support receiving and exporting documents.
- After the documents are sent across to the Oracle application, the system deletes the documents from Gateway.

Gateway Objects and Unifier Provider Objects

Business Processes

When you deploy a BP design to Gateway, the system maps to the BP design, in Gateway, in two ways:

- Mapping to the existing, predefined, objects in Gateway.
- Mapping to a newly created object in Gateway, under Unifier Provider.

Mapping to a newly created object in Gateway requires that you:

- Use the dynamic object mapping, in Gateway, to map the newly created objects from Unifier Provider to an existing object in Gateway.
or
- Create a new object in Gateway and map the Unifier Provider object to newly created object in Gateway.

The new objects created in Unifier Provider contain the following default information:

- Object name.
- A description
- Fields (including respective properties) associated with the design

Before you can use the object, you must configure the remaining information for the newly created object:

- Data related to Flow Type
- Cross-reference to the Gateway object

After you complete mapping the object in Gateway, you can use the object for creating business flows in Gateway and use the data.

Configuring Unifier Objects on Gateway

By default, the mapping of data involves the following applications in order:

1. Unifier
2. Unifier Provider on Gateway
3. Gateway Provider on Gateway

Mapping to a newly created object in Gateway requires that you match the information of that object in Gateway to the information of the object that you deployed from Unifier. In Gateway, after you find and select an object that you can use (that is, an object that has matching information), you can proceed by cross-referencing the object in Unifier to the selected object in Gateway.

Default Gateway Objects

The following table lists the object names that are available for mapping in Gateway, by default, and provides a description:

Item	Object Name	Description
1	BlanketPurchaseOrder	A company level purchase order, which enables agreements with vendors to provide services across multiple projects, released on a per-project/per-period basis with work authorizations against a previously determined maximum
2	BlanketPurchaseOrderDetail	Line Items for Blanket Purchase Orders
3	Contract	Base Commit for EPC Activities (SOV = Payment Application)
4	ContractDetail	Line Items for Contracts
5	PurchaseOrder	To track money committed to be spent (General Spends type Base Commit)
6	PurchaseOrderDetail	Line Items for Purchase Orders
7	WorkRelease	Process that is connected to Blanket Purchase Order Business Process that is deployed at company level. This process can be used to write against the blanket purchase order
8	WorkReleaseDetail	Line Items for Work Releases
9	ChangeOrder	A formal commit change to the contract.
10	ChangeOrderDetail	Line Items for Change Orders
11	POAmendment	Approval process for purchase order changes.
12	POAmendmentDetail	Line Items for PO Amendments
13	Invoice	A general process for requesting and approving payments against commitments (invoice at the CBS or breakdown level, do not calculate retainage or stored materials)
14	InvoiceDetail	Line Items for Invoices
15	PaymentApplication	A process to track your payment information using a standard payment application method (for example, tracking retainage, stored materials, past payments, and so on)
16	PaymentApplicationDetail	Line Items for Payment Applications
17	Estimate	Used to create multiple project estimates and identify the preferred scenario.
18	EstimateDetail	Line Items for Estimates
19	BudgetApproval	Used to approve project budget
20	BudgetApprovalDetail	Line Items for Budget Approval
21	BudgetChange	For requesting additional (or reduced) budget beyond the existing budget.
22	BudgetChangeDetail	Line Items for Budget Changes

Item	Object Name	Description
23	BudgetTransfer	For transferring budget from one CBS code to another. Most typically used to release budget contingency to other cost items.
24	BudgetTransferDetail	Line Items for Budget Transfers
25	PotentialChangeOrder	Contractor initiated potential change order
26	PotentialChangeOrderDetail	Line Items for Potential Change Orders
27	JournalEntry	A process for adjusting spends line items. Most commonly used to reassign costs to alternate cost centers or GL codes; Generic spend to transfer across cost codes
28	JournalEntryDetail	Line Items for Journal Entries
29	Payment	BP to hold Checks Processed Information from Financial System.
30	PaymentDetail	Line Items for Payments
31	RiskAndIssue	A log for documenting, tracking, and estimating impacts of open issues and risks; Log of items that may impact schedule/scope/cost
32	RiskAndIssueDetail	Line Items for Risks & Issues
33	FundAppropriation	Fund accounts as assigned to projects
34	FundAppropriationDetail	Line Items for Fund Appropriations
35	ProjectInformation	Project attribute information
36	VendorEvaluation	Document vendor performance for consideration for future work (Simple)
37	Vendor	Company vendor directory
38	Vendor Detail	Line Items for Vendors
39	Timesheet	Used to capture Employee Timesheets (project / non-project hours)
40	TimesheetDetail	Line Items for Timesheets
41	RequestforSubstitution	A change of identical material or equipment
42	RequestforSubstitutionDetail	Line Items for Request for Substitution
43	BudgetChangeOrder	A change to a budget that is typically created for a contractor that is based on changes to a contract between the contractor and owner
44	BudgetChangeOrderDetail	Line Items for Budget Change Orders
45	BudgetItem	A budget that is typically created for a contractor that is based on a contract they have with an owner for a project
46	BudgetItemDetail	Line Items for Budget Items

Item	Object Name	Description
47	PaymentApplicationtoOwner	A payment application that is raised by a contractor to the owner for the contractor to receive payment
48	PaymentApplicationtoOwnerDetail	Line Items for Payment Applications to Owner
49	PaymentFromOwner	A record of the actual payments a contractor will have received from the owner based on the payment application they presented to the owner
50	PaymentFromOwnerDetail	Line Items for Payments From Owner

User-Defined Report (UDR)

Unifier displays a project-level/company-level UDR that is enabled for integration in the log of the Business Objects node (this node is available by going to the **Company Workspace** and switching to **Admin** mode; in the left Navigators, select **Integrations**, select **Gateway**, and then select **Business Objects**).

You can export data, generated out of a project-level/company-level UDR that is enabled for integration, to an Oracle/external application Provider through Gateway.

To export, you can select the listed UDR and select Deploy to send the data in the UDR to Gateway and use the data for integration with an Oracle/external application Provider.

Gateway Node in Unifier

To access the **Gateway** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, select **Gateway**, and then select **Business Objects**.

The **Gateway** node provides the following information on the **Gateway Integration** landing page:

- **API URL**
 - This element captures the Gateway API URL that Unifier goes to in order to establish connection with Gateway.
 - Data Definition: SYS Description Text 250
- **User Name**
 - This element contains the user's name who logs into Gateway URL.
 - Data Definition: SYS Long Name
- **Unifier Deployment**
 - Allows you to enter the name of the Unifier Deployment, which needs to be accessed to exchange data with external applications
 - Data Definition: SYS Short Description Text 250
- **Integration Parameters** block

- **Source Base Currency**
- **Activity Sheet Synchronization**
 - * **Import Synchronization** (The import synchronization that is selected for Activity and Assignment data for customers with access to the EVM feature and import synchronization that is selected for Activity data for customers without access to the EVM feature.)
 - * **Export Synchronization**
- **Rate Sheet Synchronization**

To see the **Integration Settings**, select **Open** from the toolbar to open the **Integration Settings** window. In the **Integration Settings** window, you can edit fields and run tests. The Integration Settings window contains the following blocks and fields:

Gateway block

- **API URL**
- **User Name**
- **Password**
 - Contains the password required to log on to the Gateway URL.
 - Data Definition: Short Description Text
- **Test Connection**
 - Enables you to run a test to verify that the Gateway URL and other credentials are valid. See the **Testing Connection** section later in this topic.
- **Unifier Deployment**
 - Allows you to enter the name of the Unifier Deployment, which needs to be accessed to exchange data with external applications
 - Data Definition: SYS Short Description Text 250

Integration Parameters block

Select Source Base Currency for Rate Conversion

- **Currency**
- **Select Synchronizations to exchange Activity data**
- **Import Synchronization** (editable drop-down (size 250 chars))
- Contains the name of the Gateway Synchronization, which will be used to Import Activity data from Unifier to P6.
- Using the Gateway URL and the Unifier Deployment details captured within the **General** tab of **Company Settings**, this field lists all the "Import" synchronizations from the URL, which are applicable to the mentioned Unifier Deployment.
- The synchronizations shown in the drop-down will be the ones that match the Unifier Deployment. It lists the OOTB synchronizations provided for Oracle Primavera Cloud.

Note

For Unifier, this is an "Import" synchronization (to import data). From P6 perspective, this is an "Export."

For customers with or without access to the EVM feature, the import synchronization that is selected in **Select Synchronizations to exchange Activity data** will be the import synchronization that is selected for EVM data, provided customer selected that prior to upgrade to 20.7; otherwise, the synchronization selected will be from **Select Synchronizations to exchange Activity data**.

For all customers, the activity import synchronization that is selected in **Select Synchronization to exchange Activity and Assignment data** prior to upgrade to 20.7 is shown as selected under import synchronization **Select Synchronization to exchange Activity data**. If there is no synchronization selected in **Select Synchronization to exchange Activity and Assignment data**, the synchronization selected in **Select Synchronization to exchange Activity data** must be selected. If none of them are selected prior to upgrade to 20.7, the import synchronization will be empty.

Starting from 20.7, customers with or without access to the EVM feature can get data from P6, and the existing export synchronization and Import Synchronization selected from Role and Resources synchronization will not have any impact.

- **Export Synchronization** (editable drop-down (size 250 chars))
Contains the name of the Gateway Synchronization which will be used to Export Activity data from P6 to Unifier.

Using the Gateway URL and the Unifier Deployment details captured within the **General** tab of **Company Settings**, this field lists all the "Export" synchronizations from the URL which are applicable to the mentioned Unifier Deployment.

The export synchronization shows additional OOTB synchronizations "**Send Activity data from Unifier to Primavera Cloud**" defined for Primavera Cloud. You will be able to push the updated activity data to Primavera Cloud, using the export synchronization.

The Export Synchronization option "Update Activity data from Unifier to Primavera Cloud" enable you to send updated activity data from Unifier to Primavera Cloud. When you are using Primavera Cloud data for scheduling a project, you can bring the activities, schedules, and the associated WBS to the Unifier Activity Sheet. From the Activity Sheet, Unifier pulls the activity attributes into the business processes. In the business processes, you can update the schedules and reverse auto-populate (RAP) data back to the Activity Sheet. In the Unifier **Activity Sheet** log of the projects that are synchronized with Primavera Cloud, the **Send Data** option enables you to send the updated schedules back to the Primavera Cloud. The business flow updates the activity data in Primavera Cloud according to the activity data in Unifier.

Note

For Unifier, this is an "Export" synchronization (to export data), from P6 perspective, this is an "Import."

- **Import Synchronization** (editable drop-down (size 250 chars))
Contains the name of the Resource and Role Rates from P6 for EVM Copy.

When you make changes in the **Integration Settings** window, you must select **OK** to save your changes. Select **Cancel** to close the **Integration Settings** window.

Testing Connection

To run a test to verify that the Gateway URL and other credentials are valid use the **Test Connection** option, in the **Gateway** block. If the system is unable to establish connection, you will receive an error message. If the system is able to establish connection, you will receive a confirmation message.

Business Objects Node in Unifier

To access the **Business Objects** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, select **Gateway**, and then select **Business Objects**.

The **Business Objects** log in Unifier provides the following information:

- List of Unifier objects that have been deployed from uDesigner. The objects are:
 - Projects/Shells (attribute form)
 - Business Processes

Note

The following types of BPs are not supported for integration: Project/Shell Creation BP - Resource BP - RFB BP - Text BP.

- Roles (attribute form)
- CBS Codes (Unifier CBS Shell-type only)
- Detailed information about each object that has been deployed:
 - Name
 - Category
 - Type
 - Last Updated
 - Last Deployed to Gateway
- A mean to deploy a Business object that is ready to Gateway
 - Deploy to Gateway

In the Business Objects log, the columns provide detailed information about each Unifier object that has been deployed.

Column name	Description
Name	The name of the object.
Category	The category of the object: Business Processes, Shell Manager, and so forth
Type	The type of object: Activity Sheet Attributes (from P6 and not defined in uDesigner), Resource Attributes, Roles Attributes, Cost, Simple, Shell Type, Document, Line Item, and so forth.
Last Updated	The date when the object was last updated, which is the Unifier object "Deploy" date from uDesigner.
Last Deployed to Gateway	The date when the object was last deployed to Gateway.

In the Business Objects log, the *menu* enables you to:

- Deploy an object to Gateway
 - Edit
- Find an object by applying filters
 - View
- Review the history of a Unifier object
 - View
- Access Unifier Help, documentation library, and productivity kit
 - Help

In the Business Objects log, the *toolbar* enables you to:

- Deploy an object to Gateway
 - **Deploy to Gateway**
- Review the history of an object
 - **History**
- Find an object by applying filters
 - **Find**

Deploy to Gateway

When deployed to Gateway, the system appends the attributes of the objects in Unifier to the corresponding object in Unifier **Provider**. You can select multiple items and deploy the selected items to Gateway. For the selected objects, the user can create the following and synchronize the data exchange:

- Data Mapping templates
- Business Process flows

If the "Integration" form of the following is set in uDesigner, you can use this option to deploy:

- Activity Sheet Attributes (as captured in Unifier which flow to Unifier Provider which flow to Gateway)
The deploy action only sends the values that you had manually entered in the Activity Attribute Form to Gateway.

The "Activity Sheet" object in Gateway contains all the pre-defined Activity Attributes fields by default.

If you have added bitemID field in the Activity Sheet, the P6 CBS code (P6) can then be mapped to the bitemID in the field mappings on Gateway.

- Projects/Shells (attribute form)
- Business Processes
Data Elements of type SYS Rich Text must not be sent to Gateway, when deployed.
- Roles (attribute form)
- CBS Codes (Unifier CBS Shell-type only)
- Project/Shell-level User-Defined Reports (UDRs)
- Company-level UDRs

How to exchange data through UDR with an Oracle application Provider

You can export the data generated out of a UDR through Gateway and out to an external system. UDRs that are enabled for integration (that is, the **Enable for Integration** option is selected) appear in the Business Objects node log, under Gateway in Company Workspace. You can deploy these UDRs and integrate them with Oracle integrators.

Note

For a UDR to be eligible for deploying to Gateway, you must select the **Enable for Integration** option.

All the UDRs, which have been enabled for integration (that is, the **Enable for Integration** option is selected), are listed in the Business Objects node, and you can choose to deploy those UDRs to Gateway to configure them for Data Exchange.

The Business Objects node log displays UDR types and categories.

All Project/Shell-level UDRs have Project/Shell level as their type and User Defined Report as their category.

All company-level UDRs have company-level as their type and User Defined Report as their category. You can search for and find a UDR Business Object by type or category.

If you deselect the "Enable for Integration" option of a UDR after it has been deployed to, and configured in (for a Business Flow), Gateway, the system generates an error when synchronizing.

If you delete a UDR that you have recently deployed to, and configured in (for a Business Flow), Gateway, the system generates an error when synchronizing.

When a Line Item Type BP is deployed to Gateway, from Unifier, the system creates two objects for that BP.

You can create different field mapping templates, according to the template requirements, and use the templates in different Business Flows to transfer the data.

If you share documents between Unifier and any Oracle application, and the Oracle application does not support document integration, the system completes the Business Flow but without transferring the documents.

History

The system logs all the deployed Unifier objects in History. The **History** option allows you to view the status of a deploy action, informing you whether the deployment was successful, in addition to the following information:

- Requestor
The name of the user who has deployed the record.
- Source
If you select objects of same type and deploy, the system provides all selected objects (including names of all objects which were chosen by you for deploy) in alphabetical order.

If you select objects of multiple types and deploy, the system provides separate history entries for each of the objects that are getting deployed to Gateway.

- **Start Date**
The date when the deployment action started (Unifier started to prepare the xml file for Gateway).
- **End Date**
The date when the deployment action ended.
- **Status**
The status of deployment action (Finished, In Progress, Finished with Errors).

In the History window toolbar, you can:

- **Open**
To open an item in the History log.
 - Similar to the Open option in other "History" windows in Unifier, this action opens the "History Details" window.
 - Similar to other places in Unifier, you can take this action on one selected row only.
- **Find**
To allow you to search the History records. You can search on all columns (Requestor, Attribute Form, Submit Date, Start Date, End Date, Status).
- **Close Window**
To close the History window.

History Details

- If you select a row in the History window and select Open, the History Details window opens. This window includes information about:
 - **Business Processes**
The name of the attribute form that was deployed.
 - **Gateway URL**
The Gateway API URL through which link to the 3rd party applications is established, as defined by the user within the **General** tab of the Unifier **Company Settings**.
 - **Unifier Deployment Name**
The name of the Unifier Deployment as defined within the **General** tab of the Unifier **Company Settings**.
 - **Deploy action status details**
The details of the status of the deploy action, successful or not.

Find

The Find option allows you to search for records in all the Business Objects window columns.

Configuring Permissions for Business Objects

To configure the permissions for Business Objects:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, select **User Administration**, and then select **Access Control**.

The Access Control node includes the **Gateway** node.

To set permission for **Gateway** node:

- **Configure**
If you check this permission, the user can update the "Integration Settings" at "Gateway Integration" landing page.
- **Get / Set Activity Sheet Data**
If you check this permission, the user can do the following from the Shell log File menu (Unifier CBS type Shell):
 - **Get Activity Sheet Data** (from the Shell toolbar):
 - All Shells
 - Selected Shells
 - Filtered Shells
 - History
 - **Send Activity Sheet Data** (from the Shell toolbar):
 - All Shells
 - Selected Shells
 - Filtered Shells
 - History

Permission for "Get / Set Activity Sheet Data" from Shell log are configured in Admin mode while permissions to take these actions from within a Shell are given at User mode level.

To set permission for Business Objects node:

Deploy

If you check this permission, you will enable the Deploy option, in the right pane of the Business Objects page.

You can grant permissions, for Business Objects, by way of the User Mode Access in Access Control node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, expand **Activity Manager**, and select **Activity Sheet**.

Note

You can move the Activity Sheet module under other nodes.

The following permissions are available for **Activity Sheet**:

- **Get Data**
If you check this permission, the user can go in the **Activity Sheet** (which is available by going to the shell tab, and switching to **User** mode, and then, in the left Navigator, selecting **Activity Manager** and then selecting **Activity Sheet**) and perform "Get Activity Sheet Data" or view "History."

If you select the "Get Data" permission, the "View" permission will be selected automatically. In addition to the "Get Data" permission, the user needs the "View" permission to be able to have the "Get Activity Sheet Data" permission. You can grant "View" permission without granting the "Get Data" permission.
- **Send Data**

If you check this permission, the user can go in the **Activity Sheet** (which is available by going to the shell tab, and switching to **User** mode, and then, in the left Navigator, selecting **Activity Manager** and then selecting **Activity Sheet**) and perform "Send Data" or view "History."

If you select the "Send Data" permission, the "View" permission will be selected automatically. In addition to the "Send Data" permission, the user needs the "View" permission to be able to have the "Send Activity Sheet Data" permission. You can grant "View" permission without granting the "Send Data" permission.

- **View**

If you check this permission, the user can view **Activity Sheet** data (which is available by going to the shell tab, and switching to **User** mode, and then, in the left Navigator, selecting **Activity Manager** and then selecting **Activity Sheet**) and perform "Open."

The permissions above are also available:

- When granting permissions through User Administration (which is available by going to the **Company Workspace** tab, and switching to **Admin** mode, and then, in the left Navigator, select **User Administration**).
- Within a Shell Template or Shell Instance Access Controls.
- When granting permissions within a Shell Template or Shell Instance Access Control through User Administration.
- Where all nodes are listed in the Unifier Navigator (User mode), when appropriate.

Unifier Provider, Unifier, and Gateway

The following objects are available in Unifier Provider:

- **Project:** Includes attributes that support the creation of projects by way of Gateway. The Project object in Unifier Provider includes the following information:
 - Status
 - Location
 - Template Number
- **Business Processes (BPs):** Enables you to create/update different types of BPs such as Cost, Line Item, Document, and so forth. To correspond to the Gateway infrastructure, separate objects are available to capture the information in the BP Upper Form and Detail tab. To support the creation of BPs, the Business Processes object in Unifier Provider includes the following information:
 - Name
 - Status
 - Detail tab Name
- **Roles:** Enables you to create/update Roles (go to the Resource Manager and then select Roles) if you have access to the Resource Manager feature, which was deprecated starting with version 23.10.
- **Resources:** Enables you to create/update Roles (go to the Resource Manager and then select Roles). If you have access to the Resource Manager feature, which was deprecated starting with version 23.10, you can use the Resources object to identify whether data from Unifier Provider can create a Role.
- **CBS Codes** (Unifier CBS Shell-type only):

- Enables you to use the CBS object in Unifier Provider to import/export the CBS code data from Unifier.
- Enables you to use the CBS object in Unifier Provider to import the CBS code data into Unifier.

The following provides more details.

Project/Shell

To create/update Project/Shell in Unifier, you can use the following attributes:

- Data Dictionary
- Business Flow
- Synchronization
- End-to-end solution

The following sections provide more details.

Project/Shell Data Dictionary

The following table describes the Data Dictionary for Unifier Provider (Project/Shell):

Attribute Name	Description
Status	To capture the status of projects. Since projects must have one of following statuses, the user must define the data value mapping XML to map status of source project and to a project status value. • Active • On-Hold • View-Only • Inactive
Location	The location of the destination Unifier Project. Example All Regions, which includes Sites, which includes Properties
Template	The "Number" of the template which must be used to create a new project. • Shell Template Numbers are enforced to be unique across all shell template types. • The system determines the "Type" of the shell that must be created, using the template number.

Project/Shell Business Flow

When defining a Business Flow in Unifier Provider (Project/Shell), the destination application parameters for Unifier Provider, Project object, enable you to define the location (Location) and template (Template) as parameters. These attributes are specific to Unifier and eliminate the need for the source application to send values for fields.

If the source application sends value for either of the parameters mentioned below via data mapping and you define the parameter value in the business flow, the value sent by way of mapping takes precedence.

The following parameters are required for successful project creation in Unifier.

Note

Oracle recommends that you set these parameters as "Required" in the Business Flow definition.

Object	Value	Description
Project Location	This is a Text field. You must enter only one location. Example All Regions > Sites > Properties If you enter multiple locations, Unifier Provider will not be able to resolve the location and project creation will fail.	Use this parameter to identify the location (Location): Where the Unifier project must be created. You can also add the location as "Shell Attribute" (uuu_location) when defining the "Project" object filters. If you define the location parameter as a shell attribute (uuu_location = <xyz>), and use the available drop-down field (Location) for the Project object, project creation will fail. If you add a filter row by selecting the fields as Shell Attribute Form and provide a value of the Shell Location, for Project object, project creation will fail.
Project Template Number	This is a Text field. You must enter only one number. If you enter multiple numbers, Unifier Provider will not be able to resolve the template and project creation will fail.	Use this parameter to identify the templates which must be used to create the new Project.

Project/Shell Synchronization

Synchronization in Unifier Provider (Project/Shell) occurs when you set the parameters (Project Location and Project Template Number) as "Required" or "Optional" in the Business Flow definition.

Project/Shell End-to-End Solution

The following explains the end-to-end solution for Unifier Provider (Project/Shell). The configuration settings are for:

- Unifier
- Unifier Provider

To configure the creation of projects in Unifier via Gateway:

Note

This is an optional step. You can skip deploying the objects from Unifier and add manually relevant fields in Gateway Data Mapping Templates directly.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, select **Gateway**, and then select **Business Objects**.
3. Deploy the Shell Attribute Forms of the shells that you want to create in Unifier, via Gateway Integration.

All fields from the deployed Shell Attribute Forms appear as attributes of Project object in the Provider Data Dictionary.

To configure the creation of projects in Unifier Provider via Gateway:

You must:

- Create Data Mapping Templates
- Define Business Flow
- Define Synchronizations
- Synchronize

The following provides the details for each step:

Create Data Mapping Templates

Create Data Mapping Templates to map attributes of the Shell that needs to integrate with the Oracle application. All attributes of the Data Dictionary Project object are available to be added to the Data Mapping Template.

Note

Ensure that you create one Data Mapping Template per Shell type.

If you do not want to deploy from Unifier and want to create the Data Mapping Templates in Gateway directly, add each Shell Attribute Form Data Element that needs to receive data from the Oracle application Project object, manually.

If you want to deploy from Unifier, after adding the Shell Attribute Form Data Element:

- If the manually added field is same as one of the fields that were deployed from Unifier, there will be no adverse impact on the existing fields.
- If the manually added field does not exist as a Data Element in Unifier, there will be no adverse impact on the existing fields.

The fields remain as they are when the Oracle application sends values for the fields that were added to Unifier Provider and those values are not sent to Unifier.

Define Business Flow

Define Business Flow using the appropriate Data Mapping Template.

Create one Business Flow per Shell type.

Add the appropriate source (Source) application parameters to filter the projects that you want to create.

Add the values of relevant destination (Destination) application parameters (Location and Template).

Configure the Business Flow to be used for creating (Create) and updating (Update) the project.

Define Synchronizations

Define Synchronizations by using the appropriate Business Flow.

Define the appropriate parameter values for data exchange.

Define the schedule frequency so that the synchronization does not have to be run manually for the project creation or update.

Synchronization

When a synchronization is run, Unifier Provider sends data to Unifier to:

- Create or update a Shell instance (as per Business Flow configuration).
- Populate the Data Element with the name of the application that is integrating with Unifier, if the destination Shell Attribute Form contains the "uuu_integrated_with" Data Element.

Note

Gateway sends the application name value. The name is not hard-coded by Unifier.

Gateway maintains a cross-reference table between objects of the two applications to monitor whether to create or update the records of an object. The cross-reference table has IDs of projects in Unifier and P6. If the cross-reference table has an entry for a Unifier project against a P6 project, Gateway will update the Unifier project; otherwise, Gateway will create a Unifier project.

Note

If a project exists in Unifier and does not have an entry in the Gateway cross-reference table, when Gateway proceeds to create a project, the create request is converted to update request and the existing project is updated, instead of creating a new project. This prevents creating a duplicate project.

Business Processes

To create/update Business Process records in Unifier, you can use the following attributes:

- Data Dictionary
- Business Flow
- Synchronization

- End-to-end solution

The following sections provide more details.

Business Processes Data Dictionary

Data Dictionary (Unifier Provider Business Processes)

Note

- The remaining attributes are deployed from Unifier, as Data Elements, and will be added to relevant business processes, per business need.
- If available, the Object IDs in Gateway are noted in the corresponding field.
- The Parent Element ID is the tag in the Line Item which connects the Line Item with the parent record in which the Line Item has to exist in.
- Create separate templates for importing data into different BPs.

Item	Object Name	Description	Object Attributes
1	Company Costs	Business processes that hold company level costs. When deployed from Unifier, the Upper forms of the Business Processes of the following category provide data for this object: Type = Cost AND Sub-type = Commit at Company Level AND Classification = <Null> OR Generic	• Record Number (record_no) • Title (title) • Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) • Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) • Status (status) • Amount (amount)
2	Company Costs Detail	Detail tabs of Company Cost business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Company Costs category provide data for this object.	• Parent Record Number • Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) • Tab Name (uuu_tab_id) • Short Description (short_desc) • Item Quantity (uuu_quantity) • Item Unit Cost (uuu_unit_price) in Unifier Provider and PricePerUnit in Gateway Object field (S.No 4) • Amount (amouInt)

Item	Object Name	Description	Object Attributes
3	Project Commits	Project level business processes related to money committed to be spent. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Cost AND Sub-type = Line Items with CBS Code OR Line Items with Multiple Codes AND Classification = Base Commit OR Change Commit	- Record Number (record_no) - Title (title) - Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) - Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) - Due date (due_date) - Effective Date (uuu_effective_date) - Transaction Currency (currencyid) - Rate in Project Currency (currencyrate) - Status (status) - Description (description) - Amount (amount) - Publish Path (uuu_dm_publish_path) - Reference BPO (ref_bpo) - Contract/PO (refid)

Item	Object Name	Description	Object Attributes
4	Project Commits Detail	Detail tabs of the Project commits type business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Project Commits category provide data for this object.	• Parent Record Number • Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) • Tab Name (uuu_tab_id) • Cost Code (bitemID) • Short_Description (short_desc) • Description (description) • Work Package (wpid) • Item Quantity (uuu_quantity) • Item Unit Cost (uuu_unit_price) in Unifier Provider and PricePerUnit in Gateway Object field (S.No 4) • Amount (amount) • Reference BPO Lineitem (ref_bpo_lineitem) • Reference (uuu_sovlinum) • Parent Detail Id (ParentDetailId)
5	Project Invoices	Invoice-related Project level business processes. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Cost AND Sub-type = Line Items with CBS Code OR Line Items with Multiple Codes AND Classification = General Spends OR Payment Applications	• Record Number (record_no) • Title (title) • Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) • Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) • Due date (due_date) • Effective Date (uuu_effective_date) • Contract/PO (refid) • Transaction Currency (currencyid) • Amount (amount) • Status (status) • Publish Path (uuu_dm_publish_path)

Item	Object Name	Description	Object Attributes
6	Project Invoices Detail	Detail tabs of the Project invoices type business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Project Invoices category provide data for this object.	• Parent Record Number • Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) • Tab Name (uuu_tab_id) • Cost Code (bitemID) • Short_Description (short_desc) • Description (description) • Work Package (wpid) • Item Quantity (uuu_quantity) • Item Unit Cost (uuu_unit_price) in Unifier Provider and PricePerUnit in Gateway Object field (S.No 4) • Amount (amount) • Effective Date (uuu_effective_date) • Scheduled Value (scheduled_value) • Parent Detail Id (ParentDetailId)
7	Other Project Costs	Project level business processes that capture costs other than commits or invoices. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Cost AND Sub-type = Line Items with CBS Code OR Line Items with Fund Code OR AND Classification = Generic OR Transfer OR	• Record Number (record_no) • Title (title) • Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) • Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) • Status (status) • Amount (amount) • Publish Path (uuu_dm_publish_path)

Item	Object Name	Description	Object Attributes
8	Other Project Costs Detail	Detail tabs of the Other Project costs type business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Other Project Costs category provide data for this object.	• Parent Record Number • Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) • Tab Name (uuu_tab_id) • Cost Code (bitemID) • Fund Code (uuu_fund_code) • Short_Description (short_desc) • Description (description) • Item Quantity (uuu_quantity) • Item Unit Cost (uuu_unit_price) in Unifier Provider and PricePerUnit in Gateway Object field (S.No 4) • Amount (amount) • Effective Date (uuu_effective_date)
9	Project Simple	Project level Simple business processes. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Simple AND Level = Project/Shell	• Record Number (record_no) • Title (title) • Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) • Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) • Status (status) • Publish Path (uuu_dm_publish_path)

Item	Object Name	Description	Object Attributes
10	Company Simple	Company level Simple business processes. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Simple AND Level = Company	- Record Number (record_no) - Title (title) - Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) - Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) - Status (status) - Due Date (due_date) - Publish Path (uuu_dm_publish_path)
11	Company Line Item	Company level Line Item type business processes. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Line Item AND Sub-Type = Any AND Level = Company	- Record Number (record_no) - Title (title) - Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) - Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) - Status (status) - Due Date (due_date) - Publish Path (uuu_dm_publish_path)
12	Company Line Item Detail	Detail tabs of the company Line Item type business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Company Line Item category provide data for this object.	- Parent Record Number - Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) - Tab Name (uuu_tab_id) - Short Description (short_desc)

Item	Object Name	Description	Object Attributes
13	Project Document	Project level Document type business processes. When deployed from Unifier, the Upper forms of the business processes of the following category provide data for this object: Type = Document AND Sub-Type = Any AND Level = Project/Shell	- Record Number (record_no) - Title (title) - Creator (uuu_creator_id) in Unifier Provider and CreateUserId in Gateway Object field (S.No 2) - Creation Date (uuu_creation_date) in Unifier Provider and CreateDate in Gateway Object field (S.No 1) - Short Description (short_desc) - Status (status) - Publish Path (uuu_dm_publish_path)
14	Project Document Detail	Detail tabs of Project Document type business processes. When deployed from Unifier, the Detail tabs of all business processes that are in Project Invoices category provide data for this object.	- Parent Record Number - Line No./LiNum in Unifier Provider and LineNo in Gateway Object field (S.No 3) - Tab Name (uuu_tab_id) - Name (uuu_Name) - Short Description (short_desc) - Line Item Status (uuu_line_item_status) - Issue Date (uuu_issue_date)

Summary Payment Application (SPA) SOV type BPs

The creation and update of the Line Items in the Summary Payment Application (SPA) SOV type BPs requires three fields in the Unifier Provider. These fields are designed to identify and separate the SPA SOV type BPs in the Unifier Provider from the existing SPA SOV type BPs in Unifier.

Note

Line Item update is not supported for Project Invoice (Payment Applications) Type of BP's through Gateway Integration. As a result, every Update from Gateway to Unifier will result in the creation of a new Line Item.

Depending on which Line Item is referenced, the Line Items coming from Gateway follow a certain structure as described in the examples below:

Base Commit Type BP Line Item

Example

```

<_bp_lineitems> <!--Summary Line -- >
<ElementId>Summary1</ElementId>
<ParentDetailId></ParentDetailId>
<short_desc>desc 1</short_desc>
</_bp_lineitems>

<_bp_lineitems> <!--Costed line -- >
<ElementId>costed line 1</ElementId>
<ParentDetailId>Summary1</ParentDetailId>
<short_desc>desc 1</short_desc>
</_bp_lineitems>

```

Note

The `parentdetailid` connects the BP Line Item to its parent Summary Line Item in the SOV.

Change Commit Type BP Line Item

Example

```

<_bp_lineitems> <!--Summary Line -- >
<ElementId>Summary1</ElementId>
<ParentDetailId></ParentDetailId>
<short_desc>desc 1</short_desc>
<uuu_sovlinum>1</uuu_sovlinum>
</_bp_lineitems>

<_bp_lineitems> <!--Costed line -- >
<ElementId>costed line 1</ElementId>
<ParentDetailId>Summary1</ParentDetailId>
<short_desc>desc 1</short_desc>
<uuu_sovlinum>1.1</uuu_sovlinum>
<bItemID>Code 1</bItemID>
</_bp_lineitems>

```

Note

- The `parentdetailid` connects the BP Line Item to its parent Summary Line Item in the SOV.
- The Data Element `uuu_sovlinum` is an optional field. If the value is received by Unifier for the same field, the system will try to update an existing row; otherwise, the update will create a new Line Item in the SOV (based on the settings of the SOV).

Invoice Type BP Line Item**Example**

```
<_bp_lineitems> <!--Summary Line -->
<ElementId>Summary1</ElementId>
<ParentDetailId></ParentDetailId>
<short_desc>desc 1</short_desc>
<bItemID></bItemID>
<_refnum>1</_refnum>
</_bp_lineitems>

<_bp_lineitems> <!--Costed line -->
<ElementId>costed line 1</ElementId>
<ParentDetailId>Summary1</ParentDetailId>
<short_desc>desc 1</short_desc>
<bItemID>Code 1</bItemID>
<_refnum>1.1</_refnum>
</_bp_lineitems>
```

Note

- The `parentdetailid` connects the BP Line Item to its parent Summary Line Item in the SOV.
- The `refnum` is for Unifier and is used when creating the structure within the SOV for the incoming Line Items and the Summary lines.

Unifier Provider BP Objects and Gateway Objects

To correspond to the Unifier Provider objects (explained in the preceding Data Dictionary section), Gateway will introduce new objects to support the various business processes.

You can use the mapping information in the following table to see how data is sent from Unifier to an Oracle application and flows from object to object (Unifier Provider to Gateway).

Item	Unifier Provider Object Name	Corresponding Gateway Object Name
1	Company Costs	BlanketPurchaseOrder
2	Company Costs Detail	BlanketPurchaseOrderDetail
3	Project Commits	BudgetChangeOrder BudgetItem Contract PurchaseOrder WorkRelease ChangeOrder POAmendment
4	Project Commits Detail	BudgetChangeOrderDetail BudgetItemDetail ContractDetail PurchaseOrderDetail WorkReleaseDetail ChangeOrderDetail POAmendmentDetail
5	Project Invoices	Invoice PaymentApplication PaymentApplicationtoOwner
6	Project Invoices Detail	InvoiceDetail PaymentApplicationDetail PaymentApplicationtoOwnerDetail
7	Other Project Costs	Estimate BudgetApproval BudgetChange BudgetTransfer PotentialChangeOrder JournalEntry Payment PaymentFromOwner RiskAndIssue FundAppropriation
8	Other Project Costs Detail	EstimateDetail BudgetApprovalDetail BudgetChangeDetail BudgetTransferDetail PotentialChangeOrderDetail JournalEntryDetail PaymentDetail PaymentFromOwnerDetail RiskAndIssueDetail FundAppropriationDetail
9	Project Simple	ProjectInformation

Item	Unifier Provider Object Name	Corresponding Gateway Object Name
10	Company Simple	VendorEvaluation
11	Company Line Item	Vendor Timesheet
12	Company Line Item Detail	VendorDetail TimesheetDetail
13	Project Document	RequestforSubstitution
14	Project Document Detail	RequestforSubstitutionDetail

Business Processes Business Flow

When defining a Business Flow in Unifier Provider (Business Processes), the destination application parameters for Unifier Provider, BP object, enable you to define which BP needs to receive data by way of the Business Flow configuration. The attributes are specific to Unifier and eliminate the need for the source application to send the values for Unifier fields.

Note

- To avoid duplicating records, create separate Business Flows (for two BPs of the same type) when importing data.
- Do not use a single Business Flow in Gateway to import into two Company Costs type BPs. Instead, use different Business Flows for setting up the data flow.

If the source application sends value for either of the parameters mentioned below via data mapping and you define the parameter value in the business flow, the value sent by way of mapping takes precedence.

The following parameters are required for successful project creation.

Object	Value	Description
Business Process Name	Text field If you enter more than one value, the integration will fail.	Use this parameter to identify the Name of the business process that requires the data from the Oracle application. The value that you enter in this parameter is used by Unifier Provider to identify which BP requires data. Example Creating Data Mapping Template • Unifier Provider object: Project Commits • Gateway object: Contracts • Oracle Application object: xyz

Object	Value	Description
Business Process Detail Tab Name	Text field If you enter more than one value, the integration will fail.	Use this parameter to identify the Detail tab of the business process that requires the data from the Oracle application. The value that you enter in this parameter is used by Unifier Provider to identify which BP requires data. Example Creating Data Mapping Template • Unifier Provider object: Project Commits Detail • Gateway object: Contracts Detail • Oracle Application object: xyz Note The tab Name is also an attribute for all Line Item objects in Unifier Provider. If the Oracle Application sends value for tab name by way of mapping, the mapped value will override the parameter value defined in Business Flow.

Object	Value	Description
Line Item Identifier	Text field Oracle recommends that you use the Data Element name. If you enter more than one value, the integration will fail.	This parameter is only used during an update of an existing Line Item (in Unifier). The value that you enter in the Data Element of this parameter is used by Unifier to identify which Line Item requires update. Note Within this parameter text box, enter the name (not label) of the Data Element on the Detail tab that must be used as the identifier for Line Item update. Unifier Provider identifies the value entered in this text box as the DE name (not label).

Business Processes Synchronization

Synchronization in Unifier Provider (Business Processes) occurs when you set the parameters (Business Process Name, Status, and Detail Tab Name) as "Required" or "Optional" in the Business Flow definition.

Business Processes End-to-End Solution

The following explains the end-to-end solution for Unifier Provider (Business Processes). The configuration settings are for:

- Unifier
- Unifier Provider

To configure the creation of Business Processes in Unifier via Gateway:

Note

This is an optional step. You can skip deploying the objects from Unifier and add relevant fields in Gateway Data Mapping Templates directly, manually.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, select **Gateway**, and then select **Business Objects**.
3. Deploy the business process record that you want to create in Unifier, via Gateway Integration.

All Data Elements from the deployed business process record appear as attributes of Business Process object (Company Costs, Project Commits, Project Invoices, and so on) in the Provider Data Dictionary.

To configure the creation of Business Processes in Unifier Provider via Gateway:

You must:

- Create Data Mapping Templates
- Define Business Flow
- Define Synchronizations
- Synchronize

The following provides the details for each step:

Create Data Mapping Templates

Create Data Mapping Templates to map attributes of the BPs Upper Form data that needs to integrate with Gateway to the Oracle application.

Note

- Ensure that you create one Data Mapping Template per BP.
- If the BP that needs to integrate has a Detail tab, create an additional Data Mapping Template, one template per Detail tab, to ensure that the map the Detail Form elements to Gateway to the Oracle application.

After you deploy the BP from Unifier to Gateway, all the attributes of the Business Process object Unifier Provider (Company Costs, Project Commits, Project Invoices, and so on) will be available for you to add to the Data Mapping Template.

If you do not want to deploy from Unifier and want to create the Data Mapping Templates in Gateway directly, you must add each BP Data Element that needs to receive data from an Oracle application object in Gateway, manually (use the Add New Field in the Add Template window). After you add each BP Data Element in Gateway, you must deploy the BP from Unifier. Note the following conditions:

- If the manually added field is the same as one of the fields that you deployed from Unifier, there will be no impact on the existing field. This is similar as if you deployed the manually added field from Unifier.

- If the manually added field does not exist as a Data Element in Unifier, there will be no impact on the existing field. When the Oracle application sends value for this field to Unifier Provider, the value remains as is and it is not sent to Unifier.

Define Business Flow

Define Business Flow using the appropriate Data Mapping Template.

Create one Business Flow per BP Upper Form and one Business Flow per BP Detail tab.

Add the appropriate source (Source) application parameters to filter the BP records that you want to extract for the Oracle application and create in Unifier.

Add the values of the following relevant destination (Destination) application parameters for the BP Records/Line Items to be created in Unifier:

- Project ID
- Business Process Name
- Business Process Detail Tab Name

Configure the Business Flow to be used for creating (Create) and updating (Update) BP Records/Line Items.

Define Synchronizations

Define Synchronizations by using the appropriate Business Flow.

Define the appropriate parameter values for data exchange.

Define the schedule frequency so that the synchronization does not have to be run manually for the BP Records/Line Items creation or update.

Synchronize

When a synchronization is run, Unifier Provider sends data to Unifier to create or update BP Records/Line Items instance (as per Business Flow configuration).

Example

To create BP records of Base Commits type in Unifier:

1. Deploy the Base Commits BP to map to Unifier Provider object (Project Commits).
2. Log in to Gateway instance and create the following two Data Mapping Templates:
 - a. Using the Gateway object "Project Commits" to map the Base Commits BP "Upper Form" information to the Oracle application.
 - b. Using the Gateway object "Project Commits Detail" to map the Base Commits BP "Detail" tab information to the Oracle application.
3. Using the appropriate Gateway objects, create the following two Business Flows:
 - a. Using Gateway object "Purchase Orders" and selecting the corresponding Data Mapping Template that you created (sub-step "a" above).
 - b. Using Gateway object "Purchase Orders Detail" and selecting the corresponding Data Mapping Template that you created (sub-step "b" above).
4. Add the appropriate source (Source App Parameters) to filter records from the source application and set the destination application parameters (Destination App Parameters) to:
 - a. Business Process Name = Base Commit

- b. Business Process Detail Tab = <detail tab name>
5. Create two synchronizations:
 - a. For Base Commit BP
 - b. For Base Commit Line Item
6. Define the schedule frequency so that the synchronization does not have to be run manually for the BP Records/Line Items creation or update.

Roles

You can create a Role in Unifier by using both Role and Resource data from an Oracle application. The Role object in Unifier **Provider** can be used to create and update Roles in Unifier. The following sections provide details about:

- Roles Data Dictionary
- Roles Business Flow
- Roles Business Flow (Destination App Parameters)
- Roles Synchronization
- Roles End-to-End Solution

Roles Data Dictionary

The Role object in Unifier Provider has the following default attributes which are the required fields needed to create a Role object in Unifier:

Attribute Name	Description
Role Name	The name of the Role object.
Role Status	The Role status is either Active or Inactive. • If the Oracle application Role Status values do not match the Unifier Role Status values, use Data Mapping values. • If the Oracle application does not send any values for this attribute, Unifier creates a Role with a default status of "Active."
Role Currency	The currency for the Role. This attribute is required for creating a Role object in Unifier. If the Oracle application does not send any values for this attribute, Unifier creates a Role with a default currency of company base currency.

As a result of the Summary Sheet integration that creates Roles in Unifier (by pulling data from P6 Schedule Summary data, the Role ID (uuu_role_id) is a required field for creating a Role object.

Creating a Role object in Unifier by pulling data from Gateway (Role/Resource object) does not require the Role ID (uuu_role_id) field for creating a Role object in Unifier.

Creating a Role object in Unifier via Gateway integration (by pulling data from Gateway Role/Resource object) requires the values of the following fields, mentioned in the table above:

- Role Name

- Role Status
- Role Currency

Roles Business Flow

Role, or Resource, mapping in Unifier (from an Oracle application) is achieved by way of the "Dynamic Object Mapping" field in Gateway.

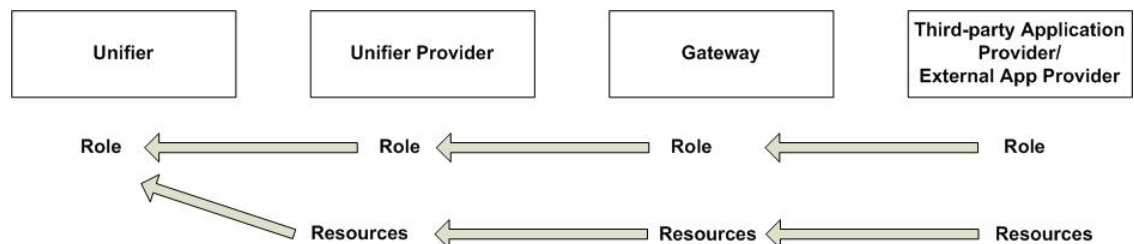
The "Create Template" window in Gateway enables you to select "Provider 1" as an Oracle application and "Provider 2" as Unifier.

In the section available for mapping objects, you can select "Resource" as the object in the Oracle application and "Role" as the object in Unifier (Provider 2).

You can choose criteria to bring the "Resource" data from the Oracle application by selecting the "Use Criteria Step" checkbox. You can then proceed to the next step and add the required mappings.

Roles Business Flow (Destination App Parameters)

You can create the Roles object in Unifier from both Resources and Roles objects in Unifier Provider. As a result, when defining a Business Flow, you need to identify the parameters (Destination App Parameters) within Unifier Provider. The following explains the Roles Business Flow:



Roles Synchronization

You can create synchronization using the appropriate Business Flow.

Roles End-to-End Solution

Follow these steps to create Roles objects in Unifier, via Gateway integration:

1. Deploy the Roles Attribute Form to Gateway.
 - This is an optional step. You can use this step to add additional Data Elements (required for Role creation or to receive values from the Oracle application) to the Roles Attribute Form.
 - You can create the Role object in Unifier from Role, or Resource, object in Unifier Provider by using the destination parameter (see the Roles Business Flow (Destination App Parameters) above); however, when a Roles object is deployed from Unifier, it only provides attributes for the Role object in Unifier Provider.
2. Create Data Mapping Template.
Unifier Provider "Role" object to Gateway "Role" object to Oracle Application "xyz" object
3. Create Business Flow.

Use the Gateway "Role" object and Data Mapping Template.

4. Create Synchronization.
Use the Business Flow.
5. Create Schedule.
Enable the scheduled creation/update of roles.

Resources

You can use the Resources object to identify whether a data from Unifier Provider can create a Role/Resource. When you map a Unifier "Resource" object to a Gateway "Resource" object, you can create/update both the Resources and Roles object in Unifier. The following sections provide details about:

- Resources Data Dictionary
- Resources Business Flow
- Resources Synchronization
- Resources End-to-End Solution

Resources Data Dictionary

The Resources object in Unifier Provider has the following default attributes which are the required fields needed to create a Resources object in Unifier:

Attribute Name	Description
Resource Name	Unifier Resource Name.
Resource Status	The Resource status is either Active or Inactive. If the third-party application Role Status values do not match the Unifier Resource Status values, use Data Mapping values. If the third-party application does not send any values for this attribute, Unifier creates a Resource with a default status of "Active."
Resource Code	Resource Code.
Resource Capacity	Resource Capacity.
User First Name	First name of the user who is being added as a resource.
User Last Name	Last name of the user who is being added as a resource.
User E-mail ID	E-mail ID of the user who is being added as a resource.
Default Role Name	The role that the resource is allocated to.

Resources Business Flow

You can create the Business Flow by using the appropriate Resource-to-Resource Data Mapping Template.

Resources Synchronization

You can create the Synchronization by using the appropriate Business Flow.

Resources End-to-end Solution

Follow these steps to create Resources objects in Unifier, via Gateway integration:

1. Deploy the Resource Attribute Form to Gateway.
 - This is an optional step. You can use this step to add additional Data Elements to the Resources Attribute Form that are required for:
Resource, or Role, creation.

Receiving value from the third-party application.
2. Create Data Mapping Template.
Unifier Provider "Resource" object to Gateway "Resource" object to Third-party Application "xyz" object
3. Create Business Flow.
Use the Gateway "Resource" object and Data Mapping Template.
4. Create Synchronization.
Use the Business Flow.
5. Create Schedule.
Enable the scheduled creation/update of resources.

CBS Codes

You can create and update the CBS Codes in Unifier Cost Sheet via Primavera Gateway integration with any Oracle application.

In Primavera Gateway, you can run the Create CBS in Unifier Cost Sheet synchronization to send WBS structures and codes from P6 schedules to Unifier as CBS codes for cost sheets.

WBS codes imported from P6 through Primavera Gateway as CBS cost codes into Unifier cost sheets adhere to the following rules:

- Imported CBS codes reside within their own imported hierarchical structure. They get appended to the existing CBS hierarchy in the destination cost sheet.
- Imported CBS codes maintain the same sequence as the WBS codes specified in the P6 schedule. The sequence must be maintained even when you manually add CBS codes.
- CBS codes are created with an Active status.
- CBS codes created through P6 integration or CBS Codes with transactions cannot be edited.
- A CBS code is considered duplicate only if they appear at the same level. Therefore, a parent code cannot contain duplicate child codes.
- CBS codes cannot contain the character identical to the cost code separator.
- If the number of Unifier cost sheet segments is greater than the number of WBS levels in P6, then the following Unifier CBS codes are created for each lowest level WBS sent from P6:
 - A summary CBS code
 - A leaf CBS code below the summary CBS code

However, you can manually create additional hierarchical nodes below the imported structure.

For example, when a four-segment WBS hierarchy in P6 is imported into a five-segment CBS cost codes hierarchy in Unifier:

P6 WBS Code	Unifier CBS Code	Comments
1	+1.0.0.0.0	
1	+1.1.0.0.0	
1	+1.1.1.0.0	
1	+1.1.1.1.0	
	+1.1.1.1.0	This CBS code is created for the lowest-level WBS code imported from P6
2		
2		

Unifier and Oracle Primavera Cloud

When Unifier and Oracle Primavera Cloud are integrated, you can configure Unifier to connect a single Unifier project to a single Primavera Cloud project for cash flow.

Note

Oracle recommends that you inspect what you expect from connecting Unifier projects to Primavera Cloud projects because you may experience unexpected data and results.

Because Unifier provides advanced cash flow management capabilities, and Primavera Cloud provides advanced portfolio management capabilities, you can manage your project budget in Unifier and use Primavera Cloud portfolio management capabilities to manage the budgets across all of your projects.

In Unifier, the term "cash flow" refers to any of the following:

- The distribution of cost over time.
- The movement of money in or out of a project (or business) during a specific time period.
- The movement of money in or out of a company in regard to a specific existing project, or shell, during a specific time period.

A Unifier Project Manager uses cash flow to manage the project budget to ensure the availability of proper funding in each future period (month, quarter, or year) by:

1. Establishing a baseline spending plan: **Baseline**
2. Tracking actual costs: **Actuals**
3. Calculating future expenditures based on project schedules: **Forecast**

In Primavera Cloud, the value for the **Total Cost** field, for the following fields, is populated with data from Unifier:

1. **Planned Budget**

2. Actuals

3. Forecast

The following topics provide information about how Unifier integrates with Primavera Cloud to enable the:

- Company Administrator to specify which cash flow curves can be sources for the **Planned Budget**, **Forecast**, and **Actuals** that can be received by Primavera Cloud cash flow. Also, specify whether the cash flow curve data can be sent by Capital or Expense breakdowns.
- Unifier Project Manager to manage the budgets across all of the projects and send the data to the Primavera Cloud Portfolio Manager.

Connecting Unifier and Oracle Primavera Cloud

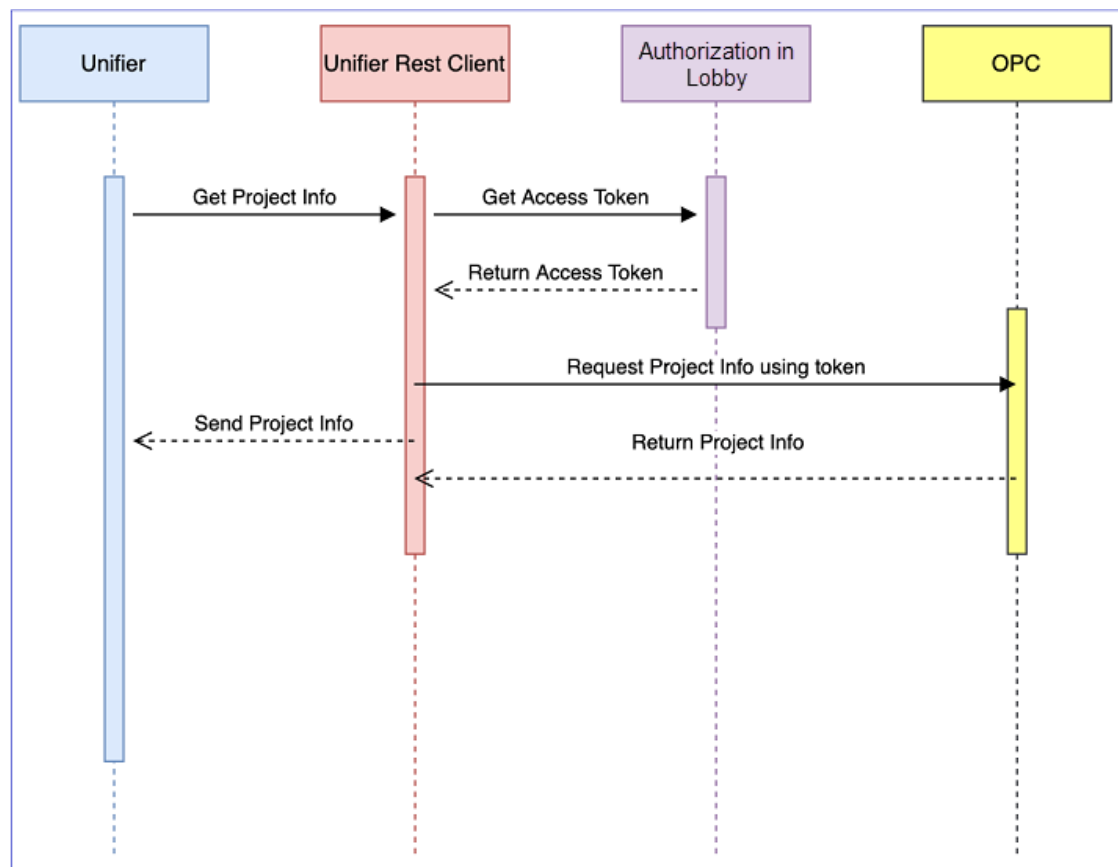
Data can be shared between Unifier and Primavera Cloud. Unifier can access the Primavera Cloud Application Programming Interface (API) through an access token generated from the Construction and Engineering Lobby.

To generate the required access token, your System Administrator (on-premises installations) or Company Administrator (cloud service) must enter the URL for the Lobby in the `custom.properties` file (**Advanced** tab of Unifier Configurator Settings). The file must contain the following entry:

```
skire.lobby.lobbyuri = <lobby URL for your environment>
```

If the server name and the host and scope name are different, the Primavera Cloud connection will not be established. As explained in [Connect for Primavera Cloud Integration](#), Unifier uses the Lobby identity application token request by sending the URL, username, and password values to get the access token and refresh token.

The following diagram shows the integration elements:



Integrating Unifier with Oracle Primavera Cloud Overview

All the application-level authentication parameters that are required to integrate Unifier and Oracle Primavera Cloud, for cash flow data, are defined under the **Primavera Cloud** functional node. When the Unifier Company Administrator selects the **Primavera Cloud** functional node, the system enables the admin to connect to Primavera Cloud, and ultimately configure the cash flow data sources that can be used to send (push) and receive (pull) the cash flow data from Primavera Cloud. For more information about connecting Unifier to Primavera Cloud, see [Oracle Primavera Cloud Integration in Unifier](#).

The Unifier project and the Primavera Cloud project are linked in the following ways:

Project service

The project service is used to link Unifier and Primavera Cloud. When the project service link is used, the Company Administrator can add the Primavera Cloud Project ID (retrieved from the Construction and Engineering Lobby) in the Unifier shell (where the project resides).

After the Primavera Cloud Project ID is added to the Unifier shell, all other project details (such as Project Name, Integration Type, and so forth) will be auto-populated in the pertinent fields.

However, if this link has not been established, or if more than one linked Primavera Cloud project is available, the Company Administrator can link the Unifier project and the Primavera Cloud project directly, by way of direct integration as explained below.

Direct integration

The direct integration is used to link Unifier and Primavera Cloud. When the direct integration is used, the Company Administrator can use just the Unifier shell (where the project resides) to link (**Add**) to the Primavera Cloud by using the Primavera Cloud Project ID (displayed).

If the **Add** option is not available, the projects have already been linked in the Lobby portal, or through project service, as explained above.

For information about adding the Primavera Cloud Project ID in the Unifier shell, see [Oracle Primavera Cloud Integration in Unifier Shell](#).

Note

The Construction and Engineering Lobby lets you access your projects that are managed in both Unifier and Primavera Cloud. For details about the Lobby, refer to the [Construction and Engineering Lobby Help](https://docs.oracle.com/cd/F23711_01/help/en/202246.htm) (https://docs.oracle.com/cd/F23711_01/help/en/202246.htm).

Similar to other nodes, accessing the **Primavera Cloud** functional node requires attaining proper permissions.

Permissions for Oracle Primavera Cloud Integration Settings

The Unifier Company Administrator is someone who will be able to configure (edit) or view the **Primavera Cloud** integration settings and the cash flow data source configurations. A Company Administrator who has the **Configure** permission can configure the source application connection and the cash flow project data sources.

The permissions for accessing the **Primavera Cloud** functional node is set within the **Access Control** functional node (go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **User Administration**, and then select **Access Control**). The permission settings for the **Primavera Cloud** are: **Configure** and **View**.

- A user with **Configure** permission can configure the source application connection and cash flow project data sources.
- A user with **View** permission can configure the integration settings.

To assign permissions to the Primavera Cloud functional node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Integrations**, and select **Primavera Cloud** to open the permission settings window and assign the appropriate permissions.

To access the Primavera Cloud node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Primavera Cloud**.

Sending and Receiving Cash Flow Data

After Unifier and Oracle Primavera Cloud are integrated, the Unifier Project Manager can send (push) the planned budget data (Baseline, Actuals, and Forecast) to Primavera Cloud to

update the project in Primavera Cloud. After the project in Primavera Cloud is updated, with the planned budget information, the Project Manager will notify the Primavera Cloud Portfolio Planner that the planned budget has been sent, by way of an external email.

For the project cash flow data to be sent to Primavera Cloud, a corresponding project must be created, or must be available, in Primavera Cloud, and the Unifier project must be linked to the corresponding project that was created, or a previously existing project, in Primavera Cloud.

You have two options to send (push) data from Unifier to Primavera Cloud and receive data (pull) from Primavera Cloud to Unifier:

1. From each individual Unifier project

After you have ensured that the Project Manager has determined the project budget (Baseline, Forecast, Actuals, and so on), you can go to the shell (**User** mode) that contains the project, and send (push) or receive (pull) the data. See [Oracle Primavera Cloud Integration and Unifier Cash Flow \(User Mode\)](#) for details.

2. From multiple Unifier projects (bulk)

After you have ensured that the Project Manager has determined the project budget (Baseline, Forecast, Actuals, and so forth) for all the projects in the company, you can go to the **Company Sponsored Shells** grouping node (**Admin** mode) that contains all of the Unifier company shells and their projects, and send (push) data from multiple projects to Primavera Cloud and receive data (pull) from Primavera Cloud into multiple projects from the District or Region log, in bulk, as explained below. See [Oracle Primavera Cloud Integration in Company Sponsored Shells](#) for details.

The next step is for the Primavera Cloud Portfolio Manager to review the planned budget and submit results back to the Unifier Project Manager.

Reviewing the Planned Budget and Submitting Results

After the Unifier budget data is sent to Oracle Primavera Cloud, and the Portfolio Manager receives and reviews the data, the Portfolio Manager will either:

1. Propose a different set of values for the budget or forecast cash flow spread as the actual budget that must be used in the project, or
2. Approve the values of the budget or forecast cash flow spread as the actual budget that must be used in the project.

Note

The third option is for the Portfolio Planner to delay the execution of the project, but explaining the details of this option is beyond the scope of this topic.

When the Portfolio Manager approves the planned budget, or proposes a new budget, the data will be received and transferred into the corresponding, or particular, Unifier project budget cash flow curve.

Note

The process above can be applied to multiple projects.

The following sections explain the details of the processes involved in sending cash flow data from Unifier to Primavera Cloud.

Oracle Primavera Cloud Integration in Unifier

The **Integrations** grouping node lets the Company Administrators configure the connection details between Unifier and external applications. The **Primavera Cloud** functional node lets the Company Administrators configure the connection details between Unifier and Oracle Primavera Cloud application.

To access the **Primavera Cloud Integration** page for cash flow integration:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Primavera Cloud**.
The **Primavera Cloud Integration** page has the following tabs:
 - **Connect** tab
 - **Cash Flow Configuration** tab
3. After you review the following information, continue to [Connect for Oracle Primavera Cloud Integration](#) for additional instructions.

Recommended Integration Settings for Unifier and Oracle Primavera Cloud

To generate an access token for REST APIs, configure the OAuth client ID in Primavera Cloud. If you need additional support, contact your System Administrator.

You must have:

- Unifier integration permissions to establish a connection with Primavera Cloud.
- Valid credentials to access Primavera Cloud.

Removing a connection to an Oracle Primavera Cloud project

If you remove the link between Unifier and a Primavera Cloud project, you must also manually remove (unlink) the Project ID for the Primavera Cloud project from the **Primavera Cloud Integration** page.

Connect for Oracle Primavera Cloud Integration

Prerequisites: Refer to the **Recommended Integration Settings for Unifier and Oracle Primavera Cloud** section in [Oracle Primavera Cloud Integration in Unifier](#).

To generate a Construction and Engineering Lobby access token:

1. In the **Connect** tab, enter the following:
 - **Primavera Cloud URL:** Enter a valid Primavera Cloud URL to send and receive data between Unifier and Primavera Cloud. The URL must be identical to the one used for the host name of the Primavera Cloud.
 - **Username:** Enter your email address.
 - **Password:** Enter your Primavera Cloud password.
2. To connect Unifier to the Primavera Cloud, select **Save & Generate Access Token**.

Note

- The refresh token is generated before the access token expires.
- If the server name and the host and scope name are different, the Primavera Cloud connection will not be established.

The system will use the access token (which is generated based on the user name and password) to authenticate the Primavera Cloud public API to send (push) and receive (pull) cash flow data for selected projects. If the values of the URL or credentials have been entered correctly, you will see this message: "The access token has been generated successfully." Otherwise, you will see this message: "The access token cannot be generated. Verify the credentials entered."

Cash Flow Configuration

In the **Cash Flow Configuration** tab, you can specify:

- Which cash flow curve types are used to send data to Oracle Primavera Cloud and whether the cash flow curve data can be sent by Capital or Expense breakdowns.
- Which cash flow curve types are used to receive data from Primavera Cloud and whether the cash flow curve data can be received by Capital or Expense breakdowns.

The **Cash Flow Configuration** tab has the following blocks:

- **Project data sources to send data to Primavera Cloud**
- **Project data sources to receive data from Primavera Cloud**

Project data sources to send data to Oracle Primavera Cloud

In this block, you can set the data for the sources that are going to be sent to Primavera Cloud, by the Unifier Project Manager.

Note

You cannot use the same cash flow name in more than one project data source to send data to Primavera Cloud.

The sources that the system uses to send data to Primavera Cloud project cash flows are:

Planned Budget

This drop-down list contains all of the data sources with cash flow curve type as *Baseline* or *Derived*.

You can select the *Baseline* cash flow curve type data, or Derived cash flow curve type data, to be sent to Primavera Cloud cash flow as **Planned Budget**.

The *Baseline* cash flow curve type data from **By Project/Shell**, **By CBS**, and **By Summary CBS** detail-level curves will be sent (pushed) to the Primavera Cloud project cash flows based on their cash flow configurations.

If Unifier is sending CBS type cash flow data, or Summary CBS type cash flow data, then the cash flow curve type data can be split into the Capital and Expense type breakdowns.

Forecast

This drop-down list contains all of the data sources with cash flow curve type as *Forecast* or *Derived*.

You can select the *Forecast* cash flow curve type data, or *Derived* cash flow curve type data, to be sent to Primavera Cloud cash flow as **Forecast**.

The *Forecast* cash flow curve type data from **By Project/Shell**, **By CBS**, and **By Summary CBS** detail-level curves will be sent (pushed) to the Primavera Cloud project cash flows.

When the **Forecast** is set to begin at the end of the **Actuals**, and the **Actuals** has replaced the **Forecast** data until the current period, then the **Forecast** data along with the **Actuals** data will be sent (pushed) to the Primavera Cloud project cash flows.

If Unifier is sending CBS type cash flow data, or Summary CBS type cash flow data, then the cash flow curve type data can be split into the Capital and Expense type breakdowns.

Actuals

This drop-down list contains all of the data sources with cash flow curve type as *Spend* or *Derived*.

You can select the *Spend* cash flow curve type data, or *Derived* cash flow curve type data, to be sent to Primavera Cloud cash flow as **Actuals**. The *Derived* cash flow curve type data is based on the **Actuals** cash flow curve type data.

If Unifier is sending CBS type cash flow data, or Summary CBS type cash flow data, then the cash flow curve type data can be split into the Capital and Expense type breakdowns.

The following curve data is sent to Primavera Cloud for each curve type that is selected in the cash flow configuration:

- From Date: The earliest From Date for each curve (**Baseline**, **Forecast**, and **Actuals**) from all defined cash flow curves (except the by commitment curves), in the log.
- To Date: The latest To Date for each curve (**Baseline**, **Forecast**, and **Actuals**) from all defined cash flow curves (except the by commitment curves), in the log.
- Distributed cost data by period.
- Total

If there are multiple CBS curves defined, and they have **Baseline** curves defined for all of them, the earliest and the latest dates across the **Baseline** curves will be sent to Primavera Cloud.

Note

The cash flow curve data, based on financial periods, will not be sent to Primavera Cloud in this release. The **Cash Flow By Commitment** curves will be ignored if they are defined in the cash flow log, for selected shells. If cash flow curve is defined by year, that cash flow data will also be ignored.

Project data sources to receive data from Oracle Primavera Cloud

You can set the cash flow data sources to receive data from Primavera Cloud (proposed or approved).

The Portfolio Budget data can be sent from Primavera Cloud through one of these levels:

- Capital or Expense breakdown level
- Total row level

The fields in this block let you select the data sources which can receive the Portfolio Budget cash flow curve data that can be sent from Primavera Cloud, based on these levels, and each level is identified in this block as follows:

Capital

Proposed Portfolio Budget by Capital

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Proposed Portfolio Budget by Capital breakdown, as the label of the drop-down field indicates.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Shared budget by capital or Approved Portfolio by Capital.

Only read-only cash flow curves are listed.

Total Proposed Portfolio Budget

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Proposed Portfolio Budget.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Shared Portfolio Total Budget or Approved Portfolio by Expense.

Only read-only cash flow curves are listed.

Approved Portfolio Budget by Capital

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Approved Portfolio Budget by Capital breakdown, as the label of the drop-down field indicates.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Approved Portfolio by Capital or Approved Portfolio by Expense.

Only read-only cash flow curves are listed.

Total Approved Portfolio Budget

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Approved Portfolio Budget.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Approved Portfolio Total Budget or Approved Portfolio By Capital.

Only read-only cash flow curves are listed.

Expense

Proposed Portfolio Budget by Expense

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Proposed Portfolio Budget by Expense breakdown, as the label of the drop-down field indicates.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Shared budget by Expense or Approved Portfolio By Capital.

Only read-only cash flow curves are listed.

Approved Portfolio Budget by Expense

This drop-down list contains all of the *Portfolio Budget* cash flow curve types or *Derived* cash flow curve types that are being used to receive data from Primavera Cloud Approved Portfolio Budget by Expense breakdown, as the label of the drop-down field indicates.

You can select one of the listed *Portfolio Budget* cash flow curve types, where the budget data received from Primavera Cloud will be stored. For example, Approved Portfolio By Expense or Approved Portfolio Total Budget.

Only read-only cash flow curves are listed.

Select **Save** when finished. Select **Cancel** to discard your changes.

Oracle Primavera Cloud Integration in Unifier Shell

The Company Administrator can use the **Primavera Cloud Integration** tab in the Unifier shell **Details** window to add or link a Unifier project to an Oracle Primavera Cloud project. When Unifier and Primavera Cloud are integrated, you can integrate cash flow data. When Unifier, Primavera Cloud, and Oracle Integration are integrated, you can use Oracle Integration recipes to update the System Activity Sheet or the Master Rate Sheet (or both) in Unifier with information from Primavera Cloud.

Note

You can use a Gateway Integration or a Primavera Cloud Integration with Unifier; you cannot use both. While one integration remains active, the other is unavailable.

To add or link a project to a Primavera Cloud project in the shell **Details** window:

1. Go to the shell (**Admin** mode or **User** mode, if you have the required permissions) that contains the project that must be linked.
2. In the left Navigator, select the shell name node to open the shell landing page.
3. In the upper-right corner, select **My Dashboard** () and then select **Details** to open the shell **Details** window.
4. Select the **Primavera Cloud Integration** tab.
5. Select **Add**, and select **Primavera Cloud Cash Flow** or **Primavera Cloud Schedule** to select the Primavera Cloud project from the linked projects in Construction and Engineering Lobby.
 - If more than one Primavera Cloud project is available, the system will open a window (**Select Project** window) and display the list of all Primavera Cloud projects that are linked to the project.

- If there is only one Primavera Cloud project is available, the system will automatically add the project to the **Primavera Cloud Integration** tab.
 - If you must change the Primavera Cloud project, or for any reason remove an existing Primavera Cloud project ID (coming from the linked projects from Lobby) and there is already data exchanged between the projects, you can delete the project from the list and proceed with adding a new Primavera Cloud project as a link.
6. When finished, select **Save**. To discard your changes, or to close the tab, select **Cancel**.

The **Primavera Cloud Integration** tab is only available in the shell Details window. The tab is not available in the Shell template or Shell creation window.

Note

- The Construction and Engineering Lobby lets you access your projects that are managed in both Unifier and Primavera Cloud. For details about the Lobby, refer to the [Construction and Engineering Lobby Help](https://docs.oracle.com/cd/F23711_01/help/en/202246.htm) (https://docs.oracle.com/cd/F23711_01/help/en/202246.htm).
- After you sign into the Lobby, you can view all the projects/shells that you are a member of.

After the system authenticates and connects Unifier with Primavera Cloud, and the project service contains the project links defined between the Unifier project and the Unifier with Primavera Cloud project within the Lobby, the Company Administrator can add the Primavera Cloud project ID to the **Primavera Cloud Integration** tab with the integration type selected as the Primavera Cloud cash flow or schedule.

The following columns are shown in the **Primavera Cloud Integration** tab:

Note

The contents of the columns are read-only.

Column Name	Contents
Project ID	Displays the source project ID (the Primavera Cloud Project Number).
Project Name	Displays the source project name (the Primavera Cloud Project Name).
Primavera Cloud Workspace	Displays the Primavera Cloud workspace name.
Integration Type	Displays the applicable integration, cash flow or integration.

Based on the **Integration Type** selected, the **Project ID** entered will initiate the project synchronization with the source application (Primavera Cloud) when the cash flow data is sent (pushed) or when the **Get Data** option is initiated for the System Activity Sheet or Master Rate Sheet.

If a selected Primavera Cloud project becomes inactive in the source application (Primavera Cloud), the row information will remain the same in the **Primavera Cloud Integration** tab, but when a data push or pull is initiated from anywhere, the system will display an error in the **Integration History Details** window.

Oracle Primavera Cloud Integration and Unifier Cash Flow (User Mode)

1. Go to the shell tab, and switch to **User** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
3. In the **Cash Flow** log, to send (push) or receive (pull) the data, select the **Actions** drop-down menu and select one of the following options:

Note

These options are available only if the projects are linked.

- **Send Data to Primavera Cloud**
- **Get Data from Primavera Cloud**
You can use the **Get Data from Primavera Cloud** option after the Oracle Primavera Cloud Portfolio Manager has made updates to the planned budget that you have submitted.

The **Integration History Details** option (in the **Actions** drop-down menu) lets you open the **History Details** window and see the action name (**Get Data** or **Send Data**), requestor information, date and time of the job initiation, start date and end date of the action, and the status of each action (**Completed**, **Failed**, or **Completed with errors**). The status **Completed with errors** is shown when the data push of at least one project of the selected projects has failed.

The **History Details** window shows whether the push or pull of the cash flow data to the linked projects is successful. If a push is not successful, the system will display a message specifying the reason for failure.

You can select a history record and select **Open** to open the **Job Details** window and see more details, such as the shell name (the Unifier shell that contains the project), dates, status, and a message that indicates whether getting data from, or sending data to, the Primavera Cloud project <PROJECTNAME> is successful. Use the toolbar options on the **History Details** window to open items, refresh the items displayed, print (including exporting to CSV or Excel) items, or find an item.

When the source project is not active, the system displays a message indicating that the source project ID is not active.

Note

When you incorporate changes or modify the cash flow data and save your changes, it will take the system at least five seconds to refresh the data. User can select Send Data options after five seconds to push the latest cash flow data to Primavera Cloud.

Send Data to Primavera Cloud

The Unifier Project Manager (user) can select one or more **By CBS** and **By Summary CBS** cash flow curves and select the **Send Data to Primavera Cloud** option to send (push) the **By CBS** and **By Summary CBS** cash flow curves data to Primavera Cloud.

The following data is also sent to Primavera Cloud, for each curve type that is selected in the cash flow configuration:

- From Date: The earliest From Date for each curve (**Baseline**, **Forecast**, and **Actuals**) from all defined cash flow curves (except the by commitment curves), in the log.
- To Date: The latest To Date for each curve (**Baseline**, **Forecast**, and **Actuals**) from all defined cash flow curves (except the by commitment curves), in the log.
- Distributed cost data by period.
- Total

Only the data from the **By Project/Shell**, **By CBS**, and **By Summary CBS** cash flow curves will be sent (pushed) to the Primavera Cloud project cash flows.

Get Data from Primavera Cloud

The Unifier Project Manager (user) can select this option so the **By Project/Shell**, **By CBS**, and **By Summary CBS** cash flow curves data will receive the Portfolio Budget data from Primavera Cloud.

The following data is also sent to Primavera Cloud, for each curve type that is selected in the cash flow configuration:

- From Date: The earliest From Date for each portfolio budget curve defined in the cash flow configuration.
- To Date: The latest To Date for each portfolio budget curve defined in the cash flow configuration.
- Distributed cost data by period.
- Total

At this point:

The Project Manager will email the Primavera Cloud Portfolio Manager informing the Portfolio Manager that a new budget planning information or data has been sent. This communication also signals the request for a response from the Portfolio Manager.

The Primavera Cloud Portfolio Manager goes to the corresponding project cash flow in Primavera Cloud and refreshes the log to receive the data.

Oracle Primavera Cloud Integration in Company Sponsored Shells

In cases that one Company Administrator administers all the Unifier projects that need to send their cash flow data, or in cases that one Company Administrator administers just a set of projects that need to send their cash flow data, the following send data and get data options in the Company Sponsored Shells grouping node can be used, as explained below.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select **Organization**.
3. In the **Organization** log, select the organization of your choice to open the shell dashboard for the organization, **Summary** tab. Notice that on the left Navigator, the **Organization** grouping node expands to display the organization that you had selected with the applicable functional nodes.
4. On the organization shell dashboard, select the **Workspace** tab to open the organization workspace window.

5. From the **View** drop-down list, select **Projects** to display all of the available projects in the log.
6. Either select as many projects as you need from the displayed list, or select all of the projects displayed. These are the projects that you want to send their cash flow data to Oracle Primavera Cloud.
7. From the **Actions** drop-down list, select one of the following options:
These options are available after the Primavera Cloud integration and cash flow configurations are defined successfully, and the projects are synchronized successfully.
 - **Send Cash Flow Data to Primavera Cloud for Selected Shells**
 - **Get Portfolio Budget Data from Primavera Cloud for Selected Shells**
 - **Send Cash Flow Data to Primavera Cloud for All Shells**
 - **Get Portfolio Budget Data from Primavera Cloud for all Shells**
You can use the **Get Portfolio Budget Data from Primavera Cloud for Selected Shells** and **Get Portfolio Budget Data from Primavera Cloud for all Shells** options after the Primavera Cloud Portfolio Manager has made updates to the planned budget that you have submitted.

The **Integration History Details** option (in the **Actions** drop-down menu) lets you open the **History Details** window and see the action name (**Get Data** or **Send Data**), requestor information, date and time of the job initiation, start date and end date of the action, and the status of each action (**Completed**, **Failed**, or **Completed with errors**). The status **Completed with errors** is shown when the data push of at least one project of the selected projects has failed.

The **History Details** window shows whether or not the push or pull of the cash flow data to the linked projects is successful. In case a push is not successful, then the system will display a message specifying the reason for failure.

You can select a history record, and select **Open** to open the **Job Details** window and see more details, such as the shell name (the Unifier shell that contains the project), dates, status, and a message that indicates whether or not getting data from the Primavera Cloud project <PROJECTNAME> or sending data to the Primavera Cloud project <PROJECTNAME> is successful. Use the toolbar options on the **History Details** window to open items, refresh the items displayed, print (including exporting to CSV or Excel) items, or find an item.

When the source project is not active, the system displays a message indicating that the source project ID is not active.

Note

When you incorporate changes or modify the cash flow data and save your changes, it will take the system at least five seconds to refresh the data. User can select Send Data options after five seconds to push the latest cash flow data to Primavera Cloud.

At this point:

In Primavera Cloud, the Portfolio Manager reviews the data received (from the Unifier cash flow and into the portfolio), decides about the planned budget (either proposes a new plan or approves the plan), and sends (pushes) the data back to Unifier.

Sending Cash Flow Values from Unifier to Oracle Primavera Cloud

To send cash flow values from Unifier to Oracle Primavera Cloud as needed, you must ensure that Primavera Cloud is up and running and that you receive the access token.

Note

The following table shows the type of data that can be sent from cash flow to Primavera Cloud:

Planned Budget	By Project only (defined in project)	By CBS only (defined in project)	By Summary CBS only (defined in project)	By Project and By CBS or By Summary CBS (defined in project)	By CBS and By Summary CBS (defined in project)
Baseline or any Derived Curve based on Baseline Type	Only Summary row data	Row data by Capital and Expense if there are CBS codes whose cost type is defined as Capital and Expense.	Row data by Capital and Expense	Only Summary row data	Row data by Capital and Expense
Forecast or any Derived Curve based on forecast Type	Only Summary row data	Row data by Capital and Expense if there are CBS code whose cost type is defined as Capital and Expense.	Row data by Capital and Expense	Only Summary row data	Row data by Capital and Expense
Actuals or any Derived curve based on Spends Type	Only Summary row data	Row data by Capital and Expense if there are CBS code whose cost type is defined as Capital and Expense.	Row data by Capital and Expense	Only Summary row data	Row data by Capital and Expense

Receiving Data from Oracle Primavera Cloud Project Cash Flows

The following table shows the data that is being received from Oracle Primavera Cloud Project Cash Flows:

If integrated shell has these curves defined	The following data will be received from Primavera Cloud
Total Proposed Portfolio Budget	Summary row of the Proposed Budget data.
Total Approved Portfolio Budget	Summary row of the current Approved budget data.
Proposed Portfolio Budget by Expense	Proposed Budget data by Expense
Proposed Portfolio Budget by Capital	Proposed Budget data by Capital
Approved Portfolio Budget by Capital	Current Approved Budget data by Capital
Approved Portfolio Budget by Expense	Current Approved Budget data by Expense

Unifier and Oracle Integration

When Unifier and Oracle Integration are integrated, you can use integrations from Oracle Integration for the following:

- Workflow Business Processes (BPs)
- Non-workflow Business Processes (BPs)
- Supporting different integrations for multiple BPs
- Updating System Activity Sheets from Oracle Primavera Cloud
- Updating Manual Activity Sheets from Oracle Primavera Cloud
- Updating the Master Rate Sheet from Oracle Primavera Cloud

Roadmap for Setting Up Unifier with Oracle Integration

This is a high-level roadmap for setting up Unifier with Oracle Integration.

Prerequisites

As an administrator, you have the required permissions to access the following applications:

- Oracle Integration Administration Console (IDCS)
- Unifier with Company Administration credentials
- Oracle Integration application with administration credentials

Procedure

To setup business processes (BPs) configured to use Oracle Integration as the default integration engine, complete the following steps:

1. In the Oracle Integration Administration Console (IDCS):
 - a. Create a Trusted / Confidential Application.
 - b. Set the **Grant Type** to **Client Credentials**.
 - c. Ensure that the *application* (not a user) is assigned both Service User and Service Administrator privileges. For each of these roles, go to **Manage Applications** and add the confidential app created.
For reference, verify the Client Credentials app flow as outlined in [Setting Up OAuth and Calling Oracle Integration APIs: A Step-by-Step Guide](#)
2. Gather the following credentials and URLs:
 - The above step generates **Client ID**, **Client Secret**, and **App Scope**.
 - Keep the Oracle Integration URL and the IDCS URL. You will need this information in the subsequent steps below.
3. In Unifier, configure the connection to Oracle Integration:
 - a. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 - b. In the left Navigator, select **Integrations** and then select **Oracle Integration Cloud**.
 - c. Complete the steps outlined in [Initial Oracle Integration Setup](#).
4. Test for a successful connection and ensure a token is generated.

5. Obtain the **API path** by running a test execution in Oracle Integration (**Activate integration** and then select **Run**). You will need this information for the next step.
6. Add integration with Oracle Integration for targeted BPs:
 - a. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 - b. In the left Navigator, select **Integrations** and then select **Oracle Integration Cloud**.
 - c. In the **Oracle Integration Cloud** (right pane), select the **Integrations** tab, and then select **Business Processes** in the left pane.
 - d. Select **+ Add Integration**.
 - e. Enter the Integration URL and other details.
 - f. Ensure the **API Path** is relative (usually starts with /ic/api/...).
7. Link the integration with Oracle Integration in the targeted BPs:
 - a. Go to project/shell tab, and switch to **Admin** mode.
 - b. In the left Navigator, select **Setup**, select **Business Process**.
 - For workflow BPs, in the **Workflow Setup**, select the integration with Oracle Integration for specific workflow steps.
 - For non-workflow BPs, in the **BP Setup**, select the integration with Oracle Integration.
8. Configuring Recipes/Adapter in Oracle Integration
 - a. Trigger Setup
 - The integration should start with a REST trigger (POST method).
 - Do not configure a response. It ensures asynchronous execution.
 - Example POST request payload (JSON):

```
{
  "unifierJobId": 12,
  "env_label": "dev",
  "project_number": "P-0001",
  "project_id": 1008,
  "bp_name": "Action Item",
  "bp_prefix": "uxueai",
  "record_no": "AIT-00001",
  "record_id": 1,
  "step_name": "Review",
  "action_name": "Submit" }
```
 - b. Integration Logic
 - (Optional) Subsequent to REST trigger, setup REST Adapter or Unifier Adapter connection to get/send BP records.
 - To avoid 401 authentication errors, always use a dedicated Unifier integration user for each REST connection or Unifier Adapter connection pointing to Unifier.

Note

The same connection can be shared across multiple integrations, but each connection must have its own separate integration user (by selecting the **Company Workspace** tab, selecting **User Administration**, and then selecting **Integration User**).

- c. Configure job status updates.
Include intermediate invoke calls in Oracle Integration/recipe to update job status back into Unifier for user tracking as outlined in the Callback API.
 - d. Validate the integration setup.
 - In Unifier, create or move the BP record to the step configured with Oracle Integration.
 - Verify that the integration is triggered and executed successfully.
 - e. To monitor the integration job, users can check the status of the job in the Audit log of the BP record, and in the **Company Workspace** tab by selecting the **System Information** node and then selecting the **Oracle Integration** sub-node.
9. Error Handling
- In case of a forbidden error, check the following applications: []
- Oracle Integration IDCS: Verify that the confidential app has been assigned both Service User and Service Administrator privileges.
 - Unifier: Ensure that the correct Client ID and Client Secret from the confidential app created in Oracle Integration IDCS are being used.

Additional References

- To set up REST Adapter connection in Oracle Integration, ensure:
 - Security Policy: OAuth Custom Two Legged Flow
 - Example of Access Token Request:
`-X GET -H "Content-Type: application/x-www-form-urlencoded" -H "Authorization: Basic <encoded username:password>" -d 'grant_type=client_credentials' https://<unifier url>/ws/rest/service/v2/auth/token`

Note

Replace <encoded username:password> with the Base64 encoding of integration username:password. Substitute the correct Unifier URL.

- See the REST Adapter Connection section of the *Primavera Unifier BP Sync Starter Recipe*.

Initial Oracle Integration Setup

To configure Oracle Integration for Unifier, complete the initial setup outlined below.

Prerequisites

Ensure the following:

- Oracle Integration is provisioned.
- Unifier is to be added as a trusted application using client credentials grant type in Oracle Integration Cloud IDCS instance. Contact Oracle Support. You will need the **Client ID**, **Client Secret**, and **App Scope** information generated for Unifier in the procedure outlined below.
While creating the trusted application ensure the following:
 - Client Credentials OAuth 2.0 Grant type is used.
 - In the client configuration, add the Oracle cloud service resource as the scope. The App scope generally ends with 'urn:opc:resource:consumer::all'.
 - Assign the Application with ServiceUser and ServiceAdministrator role in Oracle Cloud Service. See [Authenticate Requests for Invoking Oracle Integration Flows](#).
- You have the Oracle Integration URL and the IDCS URL hosting the Oracle Integration instance.
- In Oracle Integration, configure and deploy the Oracle Integration Accelerator. See [Accelerator to Integrate Oracle Primavera Cloud Resources and Schedule with Unifier](#). It is highly recommended to use a dedicated Unifier Integration User Account for Oracle Integration flows while configuring the connections in the Accelerator.
- You have the relevant permissions to administer and configure Oracle Integration in Unifier. To set these permissions in Unifier:
 1. Go to the **Company Workspace** and switch to **Admin** mode.
 2. In the left Navigator, select **User Administration**, and then select **Access Control**.
 3. In the right page, expand **Administration Mode Access**, expand **Integrations**, and then select **Oracle Integration Cloud**.

Initial Setup Procedure

To establish a connection with Oracle Integration:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and select **Oracle Integration Cloud**.
3. In the right pane, select the **Connect** tab.
4. Set up the connection with Oracle Integration:
 - a. Enter the following information the first time you connect with Oracle Integration:
 - **OIC URL**: Enter a valid Oracle Integration URL (usually ending with ocp.oraclecloud.com) to send and receive data between Unifier and Oracle Integration. This might be an instance embedded with Unifier or you might have your own instance of Oracle Integration.
 - **IDCS URL**: Enter a valid Oracle Identity Cloud Service (IDCS) URL hosting Oracle Integration.
 - **Client ID**: Enter the client ID generated for adding Unifier as a trusted application in Oracle Integration.
 - **Client Secret**: Enter the client secret generated for adding Unifier as a trusted application in Oracle Integration.
 - **App Scope**: Enter the App Scope generated for adding Unifier as a trusted application in Oracle Integration. It generally ends with 'urn:opc:resource:consumer::all'
 - b. Select **Save & Generate Access Token**.

This generates a token and sets the **Enable Integration** fields to **Yes** on connecting successfully. Otherwise, recheck your Oracle Integration configuration details.

Note

For subsequent use, recheck the above field information and complete Step 2 to connect with Oracle Integration as-needed, on demand.

5. Select the Unifier modules that will use integrations from Oracle Integration:
 - a. In the **Integrations** tab, select **Manage Modules** and select/deselect any of the following modules:
 - **Business Processes**
 - **System Activity Sheets**
 - **Manual Activity Sheets**
 - **Master Rate Sheet**
 - b. Select **Save**.
6. For each module selected in the previous step, add one or more endpoints as follows:
 - a. In the left pane of the **Integrations** tab, select a module. For example, select **Business Processes**.
 - b. In the right pane, select **Add Integration**.
 - c. For each endpoint, enter the following information:
 - **Integration Name**: Enter a user-friendly name for the integration being set up.
 - **OIC Name**: (Optional) Enter the name of the integration created in Oracle Integration.
 - **API Path**: Copy the relative path of the endpoint URL from the **POST** field on the **Configure and Run** page of the integration from Oracle Integration. It usually starts with `/ic/api/`.
 - d. In the **Action** field, select **Submit**.
The **Usage** status of the integration defaults to **Unused**.

Note

If the integration is being used in the **BP Setup/Activity Setup**, the **Usage** status is set as **In Use**.

- e. In the **Activate** field, slide right to activate the integration. However, if the integration is deactivated, but being used in the **BP Setup** of a particular status/step, when the BP record is submitted, the integration will not be invoked.
When the integration is triggered as part of a BP workflow event or **Get Data** of System Activity Sheet, the job status can be viewed from the following locations:
 - **OIC Integration Log** under the **System Information** node
 - **Integration Log** of the BP record/Activity Sheet History tab

However, the progress of the integration execution is available in the **OIC Integration Log** only if the integration has a call to invoke the Unifier API with a status and corresponding error message. For more information, see [Callback API to Update Status of Integration Instance from Oracle Integration](#).

 Tip

To temporarily disable a specific integration, slide left in the **Activate** field. To permanently delete a specific integration, see [Deleting an Oracle Integration Connection](#).

7. Add users or groups with appropriate permissions to access and use integrations from Oracle Integration:
 - a. In the left Navigator, select **User Administration**, and then select **Access Control**.
 - b. In the right pane, expand **Administration Mode Access**, expand **Integrations**, and then select **Oracle Integration Cloud**.
 - c. In the **Module Permission Settings** window, select **Add**.
 - i. In the **Select Users/Groups** pane, select **Add Users/Groups** to add users or groups, and then select **OK**.
 - ii. In the **Permission Settings** pane, assign any of the following permissions to users or groups:
 - **Configure**: Select this option to allow users or groups to configure the Oracle Integration connection.
 - **View**: Select this option to allow users or groups to only view the Oracle Integration connection.
 - iii. Select **OK**.
 - d. Select **Apply**, and then select **OK**.

Proceed with **Setting Up Business Processes With** Oracle Integration as outlined in the *Unifier Modules Setup Administration Guide*.

Enabling Oracle Integration Connection

After initial setup, you can connect with Oracle Integration as-needed, on demand.

To enable the Oracle Integration connection:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and then select **Oracle Integration Cloud**.
3. In the **Integrations** tab, specify or recheck the endpoints from Oracle Integration.
4. In the **Connect** tab:
 - a. Enter or recheck the connection parameters.
 - b. Select **Save & Generate Access Token**.
This generates a token and sets the **Enable Integration** field to **Yes** on connecting successfully. Otherwise, recheck your Oracle Integration configuration details.
5. Proceed to work on your business processes (BPs).

Disabling Oracle Integration Connection

To disable the Oracle Integration connection:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Integrations**, and select **Oracle Integration Cloud**.
3. In the **Connect** tab, set **Enable Integration** to **No**.

Editing an Oracle Integration Endpoint Connection

You can modify the endpoint connection details as needed even when an Oracle Integration endpoint is in use

To edit an Oracle Integration endpoint connection:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and select **Oracle Integration Cloud**.
3. In the left pane of the **Integrations** tab, select a module. For example, select **Business Processes**.
4. In the right pane, select a row to edit that integration. For example, select an integration named **Contracts**.
5. In the **Action** field, select **Edit** .
6. Make changes to any of the following fields: **OIC Name**, **API Path**, or **Activate**.
7. In the **Action** field, perform any of the following actions:
 - Select **Save**  to update the endpoint information.
 - Select **Cancel**  to discontinue editing the endpoint information.

Deleting an Oracle Integration Connection

You can delete Oracle Integration configurations only if they are not in use.

To permanently delete an Oracle Integration connection:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and select **Oracle Integration Cloud**.
3. In the left pane of the **Integrations** tab, select a module. For example, **Business Processes**.
4. In the right pane, select a row to delete that integration. For example, select an integration named **Contracts**.
5. In the **Action** field, select **Delete** .

Integrating a Project or Shell with Oracle Primavera Cloud

You can use the Primavera Cloud Integration tab in the Details window to add or link a Unifier project to an Oracle Primavera Cloud project.

Note

- You can use a Gateway Integration or a Primavera Cloud Integration with Unifier; you cannot use both. While one integration remains active, the other is unavailable.
- To avoid discrepancy of dates and time between applications, the Oracle Primavera Cloud and Unifier servers are usually located in the same time zone.

1. Go to the shell tab, and switch to **User** mode.
2. In the left Navigator, select the shell name (**Home** icon).
3. In the upper-right corner, select **My Dashboard** () , and then select **Details** to open the **Details** form.
4. Select the **Primavera Cloud Integration** tab.
5. Select **Add**, and select **Primavera Cloud Cash Flow** or **Primavera Cloud Schedule**.
6. In the empty row that is added, complete the following fields:
 - **Project ID:** Enter the Oracle Primavera Cloud project ID. The ID must be unique to this shell and to Unifier. The ID cannot include the following characters: / \ : * ? " < > | ' =
 - **Project Name:** This field is optional.
 - **Primavera Cloud Workspace ID:** Enter the Oracle Primavera Cloud Workspace ID.

The **Integration Type** field is completed by the system, based on the option you selected from the **Add** list.
7. When you are done, select **Save**.

Integrating a System Activity Sheet or Master Rate Sheet through Oracle Integration

After the connection between Unifier and Oracle Integration is established, you can use the integrations in the **Oracle Primavera Cloud – Primavera Unifier | Integrate Resources and Schedule** accelerator to update the System Activity Sheets, Manual Activity Sheets or the Master Rate Sheet (or all).

The accelerator includes the following integrations:

- **Oracle OPC Unifier Activity Sync**
- **Oracle OPC Unifier Resources Roles Sync**
- **Oracle Update OPC Activity Spreads to Unifier**

You can initiate an update from within Unifier or in Oracle Integration.

When you use an integration to update the System Activity Sheet or Manual Activity Sheet for a project, it updates the sheet with the cost data, the Assignments (resources and roles), and the Activity Spread. Additionally, you can use the **Primavera Cloud Schedule** option to update multiple schedules. If you attempt to integrate an Oracle Primavera Cloud project that is already integrated with the same project or a different project in Unifier, the system notifies you that the integration cannot be added.

When you use an integration to update the Master Rate Sheet, it updates the sheet with all the workspaces, resources, and roles from Oracle Primavera Cloud.

Note

At the company-level, you can use a Gateway Integration and Primavera Cloud Integration with Unifier; However, at the shell-level you cannot use both. While one integration remains active, the other is unavailable.

Prerequisite

A connection between Unifier and Oracle Integration is established. See [Initial Oracle Integration Setup](#).

Procedure

To integrate a System Activity Sheet or Master Rate Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Integrations**, and select **Oracle Integration Cloud**.
3. In the **Integrations** tab, copy the applicable information from the **POST** field of the integration from Oracle Integration to the **System Activity Sheet** and **Master Rate Sheet** fields.
4. When you are done, select **Save**.

To update the System Activity Sheet from within Unifier:

1. Go to the shell tab, and switch to **User** mode.
2. In the left Navigator, select the shell name (**Home** icon).
3. In the upper-right corner, select **My Dashboard** () , and then select **Details** to open the **Details** form.
4. Select the **Primavera Cloud Integration** tab.
5. Select **Add**, and select **Primavera Cloud Schedule**.
6. In the empty row that is added, complete the following fields:
 - **Project ID:** Enter the Oracle Primavera Cloud project ID. The ID must be unique to this shell and to Unifier. The ID cannot include the following characters: / \ : * ? " < > | ' =
 - **Project Name:** This field is optional.
 - **Primavera Cloud Workspace ID:** Enter the Primavera Cloud Workspace ID.

The **Integration Type** field is completed by the system, based on the option you selected from the **Add** list.

7. To add additional projects, select **Add** again, select **Primavera Cloud Schedule**, and complete the new row.
8. When you are done, select **Save**.
9. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
10. From the toolbar of the Activity Sheets log, select **Get Data**.
11. In the **Get Data** dialog box, select the **All Projects** checkbox, and then clear any projects from the text box that you do not want updated.

12. In the **Type** section, select **Baseline**.
13. If you want to retain unreferenced data in the System Activity Sheet, clear the **Remove Unreferenced Data** checkbox in the **Advanced Options** section.
14. When you are done, select **OK**.
15. To view the status of the job, select the **History** tab in the right pane.
You can select Refresh to update the information until the Status displays COMPLETED. If the Status is FAILED, select the line to view more information about the error that occurred.

To update the Master Rate Sheet from within Unifier:

1. Go to the **Company Workspace** tab, and switch to **User** mode.
2. In the left Navigator, select **Master Rate Sheet**.
3. From the toolbar of the Master Rate Sheet log, select **Get Data** .
4. In the **Get Data** dialog box, select **OIC**, and select **OK**.
5. In the **Confirmation** message, select **Yes** to continue.
6. To view the status of the job, select the **History** tab in the right pane.
You can select Refresh to update the information until the Status displays COMPLETED. If the Status is FAILED, select the line to view more information about the error that occurred.

Getting Started with Modules Setup Administration Guide

Within the documentation, some content might be specific for cloud deployments while other content is relevant for on-premises deployments. Any content that applies to only one of these deployments is labeled accordingly.

This document explains how to set up the modules that are used in the Admin or User mode of operation.

Note

The instructions and information presented in the documentation are based on an out-of-the-box (OOTB) setup and before being customized by the user.

Access to system functionality is granted through permissions. The ability to utilize a specific function depends on permissions settings (accessed in **Admin** mode).

The application has two modes of operation:

- **Admin** (Administration) **mode**: Company administrators work in Admin mode to set up, for example, company and project/shell properties, user permissions, templates for major features, and data structures. Administrators also configure and set up business process (BP) workflows.
- **User mode**: Users spend most of their time in **User** mode. User mode allows users to perform day-to-day activities, collaborate through business processes and Mailbox, maintain, for example, the Cost Manager, Activity Manager, and Document Manager, and run reports.
The *Unifier General User Guide* explains how to use the options that are available in **User** mode.

You can switch between modes using the mode icons (**User** mode  and **Admin** mode .

Note

This option is not available in the **Home**  tab because it does not support **Admin** mode.

Using Artificial Intelligence (AI) Features

Variability of Summaries Generated by AI

Because of how AI large language models (LLMs) function, the summaries generated might vary, even when you generate summaries using the same input data and output options. The AI model makes billions of probabilistic choices when generating text, similar to how a human might rephrase the same idea between different conversations. This approach is by design,

with the intention of making the summaries feel natural and dynamic, rather than repetitive and stale. While the wording, ordering, and formatting might vary between summaries, Oracle expects that the core information and accuracy is correct.

Translation of International Data Generated by AI

When the data submitted for summarization is in a language other than English, the model first performs a translation to derive meaning. It then generates the summary in English, leveraging its capability for natural language generation (NLG). This approach provides cohesive summaries of the information, regardless of language.

However, it is important that you are aware of the inherent limitations of machine translation, particularly when it involves technical or domain-specific information. The AI feature relies on patterns learned from vast datasets, but it can occasionally struggle with highly specialized terminology, jargon, or cultural nuances that are not well-represented in its training data. This can lead to inaccuracies or a loss of precise meaning. For this reason, Oracle does not guarantee the accuracy of the summaries when the original data contains languages other than English.

Setting Up Data Structure

Creating Data Views

Data views use SQL queries that are defined against system tables and business process (BP) tables. Data views are used in custom reports, user-defined reports (UDRs), and shell dashboards.

Note

- You can create UDRs at company and project/shell levels.
- Avoid using double quotation marks for column aliases in SQL queries. Using double quotation marks can cause errors in running UDRs and dashboards if they use a data view that has column aliases.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.

Data views must contain `project_id` in the SQL query for the data view to be displayed in a project/shell-level UDR data type list.

Note

Data views published prior to the Primavera Unifier 9.5 release must be republished (that is, set to draft status and then reset to published status) before they show up in the UDR data type list.

The system includes an **Explain Plan** option that you can use to evaluate your data views. Running the Explain Plan provides important feedback that can help you modify the SQL query to reduce or eliminate performance issues.

Before you begin: Define your reporting requirements first. Collaboration between business users and technical development teams helps identify the data you must collect and how to present that data so report recipients will have an easy-to-read, useful report.

Step 1: Set permissions for data view creation. See [Grant Permissions for Data View Creation](#).

Step 2: Create data views. See [Create and Publish Data Views and Metadata](#).

- Data views must be published (as indicated by the Publish Date) before you can use them as data sources in UDRs, data cubes, or custom reports.

- Test your data view SQL queries in the **Development/Test** environment before deploying them in the **Production** environment because only by testing can you be sure the query is valid and returns the desired data. Oracle recommends that you test your SQL queries in the **Development** environment prior to deploying them in the **Test** environment or **Production** environment.
- Use the **Explain Plan** feature to evaluate the SQL performance and potential issues of data views that you design.

Note

For translation information, see the *Unifier General Administration Guide*.

Step 3: View data and metadata. See [View Data \(Query Results\) and Metadata \(Columns\) in the View](#).

Step 4: Export data. See [Export Data \(Query Results\)](#).

The data views are included in:

- Custom Reports that are using data views and are ready for the **Production** environment.
- Data Cubes that are using data views and are ready for the **Production** environment.
- UDRs that are using data views and are ready for the **Production** environment.

Grant Permissions for Data View Creation

To grant permission for data view creation:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Data Structure Setup**, and then select **Data Views**.
The Module Permission Settings window opens. Here you can add, modify, or remove permission settings.
4. Select **Add**.
5. In the **Permissions Setting for Data Views** window, select **Add Users/Groups**.
6. In the **Users/Groups** window, select the intended users or groups, and select **Add**.
7. To return to the Permissions Settings for Data Views window, select **OK**.
8. In the **Select Users/Group** section of the window, select the users or groups, and then select the applicable level of access for the user or group in the **Permissions Settings** section.
 - **View:** Allows users and groups to see the data view settings.
 - **Create/Modify:** Allows users and groups to define or change data view settings. This setting includes View permission.
9. Select **OK**.
10. Select **Apply** to save changes and keep the window open, or select **OK** to save changes and close the window.

Create and Publish Data Views and Metadata

After you create a data view, you must publish it to be able to use it in user-defined reports, data cubes, or custom reports.

Note

If you intend to use data views in user-defined reports, be aware that the data views must contain `project_id` in the SQL query for the data view to show up in a project/shell-level UDR data type list.

Depending on the data elements you choose, you might need to publish the metadata associated with the data view. For example, if the selected data element has a data definition type of pull-down Menu, you will have to publish the metadata to see the actual label of the pull-down rather than the value. In the case where a data element is defined as *Actual Value?* based on a Yes/No data element, with 0= No and 1=Yes, if *Actual Value?* is used in the data view, you must publish the metadata of *Actual Value?* to get the Yes or No value rather than 0 or 1.

To create data views:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**.
3. In the User-Defined Data Views log (right pane) select **New** from the toolbar.
4. In the **Create a Data View** window, auto-prefixed with **Unifier_**, enter the name of the data view, the label, an optional description, and the SQL query for the data view.
For more information on how to create SQL queries used in the creation and management of data views, consult the Oracle Consulting Services team.
5. Select **OK**.

Note

- When creating data views, the column naming convention must follow the Oracle DB guidelines. Do not use the Oracle-reserved words such as "(", ")" and so forth to name the column. For details, refer to Oracle DB guidelines.
- Avoid using double quotation marks for column aliases in SQL queries. Using double quotation marks can cause errors in running UDRs and dashboards if they use a data view that has column aliases.

To check the data view for potential issues:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**.
3. In the **User-Defined Data Views** log (right pane), select the applicable data view.
4. From the toolbar, select **Explain Plan**, and select **Run Explain Plan**.
5. Review the output.

6. If an entry in the **Operation** column is highlighted in yellow, hover over the highlighted entry to view additional information.
7. When you are done reviewing suggestions, select **Close**.
If potential issues are identified, the system displays an icon in the **Performance Alert** column of the **User-Defined Data Views** log.

To publish data views:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**.
3. In the **User-Defined Data Views** log (right pane), select an unpublished data view.
4. From the toolbar, select **Status**, and select **Published**.
5. Select **OK**.

When a Data View is Published, labels that are not modified in the Data View are converted to camel case. For example, CONTRACT AMOUNT displays as Contract Amount. Single words with underscores in the labels are initial-cased by default. For example, Ue_con_amount.

To publish metadata:

You can associate metadata with its data set for both labels and values. Data views tend to contain technical shorthand from system and SQL abbreviations. While clear to the technical person who wrote the data view, report consumers will appreciate seeing the same field labels and field value selections that they see in their business processes and managers.

For example, in your data view you might include the data element "year_pd," which represents a pull down menu with selections for different years assigned to its data set. In your user-defined report, you might want to see the label "Year" instead of "year_pd"; and you might want to query on meaningful values, such as 1999, 2001, 2002, and so on, instead of the numeric values of the data definition, 1,2,3, and so on.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**.
3. In the **User-Defined Data Views** log (right pane), select a published data view.
4. From the toolbar, select **Metadata**.
5. In the **Metadata for <data view>** window:
 - a. To automatically assign default metadata definitions for metadata elements that do not have a data definition, select **Assign Default Definition** from the toolbar. Default data definitions will not be applied for metadata elements with existing data definitions (added or modified).
Use the **Assign Default Definition** option if you want to apply metadata definitions: •
 - In visualizations and dependent data sources
 - When data views are exported and imported through configuration packages/add on configuration packages.

Alternatively, double-click the **Definition** field for each data element, and select the data definition for the selected element.

The data definitions available for selection are filtered by the data elements used.

- b. Double-click the **Label** field for each element you want to use in the UDR, and rename it to whatever you want to see in the report.
- c. Select **Publish Metadata**.

Note

- The SQL definition will consist of the SQL query used to populate the report with specific data based on the desired output.
- If using the data view as a Main view in a Project-level report, you must have a column named **project_id**.

For example, a Project-level data view for a company registry might be:

```
SELECT pu.PID as PROJECT_ID,
       p.PROJECTNUMBER as PROJECTNUMBER,
       c.COMPANYNAME as COMPANY_NAME,
       c.SHORTNAME as COMPANY_SHORT_NAME,
       c.DESCRPTION as COMPANY_DESCRIPTION,
       c.CONTACTNAME as COMPANY_CONTACT_NAME,
       u.FULLNAME as USER_FULL_NAME,
       u.USERID as USER_ID,
       u.USERNAME as USER_NAME,
       u.EMAIL as USER_EMAIL
FROM SYS_USER_INFO_VIEW u,
     SYS_COMPANY_INFO c,
     SYS_PROJECT_INFO p,
     SYS_PROJECTUSER pu
WHERE c.COMPANYID = p.COMPANYID
      AND p.PID = pu.PID
      AND u.userid = pu.userid
```

View Data (Query Results) and Metadata (Columns) in the View

The **Data** button returns the query results of the view (essentially, a preview of the report results, without any user entered parameters).

The **Metadata** button returns all the columns in the view. The Metadata button returns the definition of the columns: names, type and labels of the columns used in the view. For example:

Name	Type	Label
project_id	INTEGER	PROJECT_ID

To view query results:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Data**. The results window will display the query results.

To view columns:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Metadata**. The results window will return all the columns in the view.

If the Data View is in Draft status, the metadata that you see will be based on the last Published data. If the Data View has not been published before, no data is displayed.

You can delete a Data View that was included in the configuration package, indirectly.

 Note

Although deletion of a Data View is possible, if a Data View has been used in a UDR, custom Oracle Analytics Server report, or Data Cube that was included in a configuration package, the configuration package creation will fail because of the missing data views.

Export Data (Query Results)

The results of the data query can be exported as CSV or SQL files.

To export data as CSV:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Data**.
5. In the results window, select **Export As CSV**.

Depending on your browser, the file will either download automatically or you will be prompted to download it.

The CSV file will contain the data that is displayed on the results log. By default, the first 100 lines will be displayed. You can select the Display drop-down (in the upper-right corner of the results log) and choose 200 to display the first 200 lines. When you select Export As CSV, the CSV file will contain the 100 (or 200) lines displayed in the window.

To export data as SQL:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Data**.
5. In the results window, select **Export As SQL**.

Depending on your browser, the file will be downloaded automatically, or you will be prompted to download the file manually.

This will export your SQL script to create the table required for the data view and the data itself.

Note

- Only the 100 or 200 rows will be exported at a time. You cannot export the entire result of the view (for example, if there are more than 200 rows) in one click. You must export in groups of 200 rows at the maximum and then manually combine the exported results.
- SQL export files have the .sql extension and work best with the Oracle database as the field types used in the creation of the data view are of Oracle type (for example, VARCHAR). If the exported SQL file is to be used in a database other than Oracle, you must manually modify that file to replace the field types with the types that work with the non-Oracle database.
- Unifier uses a field type called TIMESTAMP for all date or time fields, so you must modify the session date format to match the timestamp used in Unifier. For example, you can run the following statement for an Oracle database: `ALTER SESSION SET NLS_DATE_FORMAT = 'YYYY-MM-DD HH24:MI:SS';`
- If you are building multiple data views based on other data views, any changes to a data view (for example, adding a new data element) in the lower hierarchy require that the dependent views to be changed to Draft, in order to refresh, and the data views must be republished, to incorporate the changes. For example, if Dataview 2 is based on Dataview 1, and you add a new field to Dataview 1 and then republish it. You must then change Dataview 2 to Draft and then republish it so that it will contain the change you made in Dataview 1.
- Additional cleaning of the data (in case of export to SQL file) might be needed if there are (') apostrophes in the values of some fields, or if there are ampersands (&). This will result in inconsistent values between the results in Unifier and the result in the local database after import.

View Data View Usage in Reports and Data Cubes

To view reports and data cubes in which a Data View is used:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Usage**.

The Usage window opens, listing the reports and data cubes in which the data view is used.

Edit Data Views

Data views must be in draft mode to edit.

To edit data views:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Status**, and select **Draft**.
5. To access the SQL statement, select **Open**.
6. Edit the SQL statement, and select **Apply** or **OK** to save changes.
7. Select the data view again, select **Status**, and select **Publish** to make the data view available for use in user defined reports, data cubes, and custom reports.

Delete Data Views

To delete Data Views:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Views**. The User-Defined Data Views log opens.
3. Select a view.
4. From the toolbar, select **Delete**.
You will receive a confirmation message that you want to delete the selected Data View.

Note

- You cannot delete Published Data Views. You must change the Status to Draft to be able to delete a Data View.
- Although deletion of a data view in Draft status is possible, if a Data View has been used in a UDR, custom Oracle Analytics Server report, or Data Cube that was included in a configuration package, the configuration package creation will fail because of the missing data views.

Review Database Table Structure

Before building your SQL statement, review the database table structure.

You can find the database table name in two ways:

1. **Using Entity Reference (ER) Views**
 - a. Sign in as a Company Administrator.

- b. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 - c. In the left Navigator, select **Data Structure Setup**, and then select **ER Views**.
 - d. Open **Business Processes View**.
 - e. Use your browser search function and search for a BP you want to report against (for example, Invoices).
The name of the table appears under the BP Name, in blue (for example, UNIFIER_UI).
The word "unifier" is the prefix and common to all BP tables. The UI is the ID of the Invoices BP).
2. **Using BP IDs**
- a. Sign in as a Company Administrator.
 - b. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 - c. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
 - d. Locate the BPs that you want to use in the report and find the IDs (first column).
 - e. Add your deployment prefix and add an underscore (_) to get the table name (for example, UNIFIER_UI).

Note

To access the Line Items of a BP, add _LINEITEM to the table name (for example, UNIFIER_UI_LINEITEM)._LINEITEMUNIFIER_UI_LINEITEM

The following lists the column names:

- Field Name
- Definition
- SQL Type
- Label
- Description

Creating Data Cubes

Data cubes comprise data that you can use to render a variety of charts (bar, area, column, line, and table) in a custom data block of a shell dashboard. In this way you can visually compare aspects of your data set.

Data cubes are either company level or shell level. The data source for data cubes can be from a business process or a manager attribute form, or from a data base query. The system does not limit the number of data cubes you can create.

To learn how to create a data cube, see the following:

- [Granting Permissions for Data Cube](#) to create a data cube
- [Defining a Data Cube](#) a new data cube, which includes:
 - Selecting the data source for the data cube
 - Completing the data cube properties
- Publishing the data cube

- [Granting Permissions for Data Cube](#) so they can view the data cube composition in Data Cube Definitions

Defining a Data Cube

To define a data cube:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Cube Definitions**. The Data Cubes log opens.
3. Select **New**, and then select **Shell Data Cube** or **Company Data Cube**. The Create Data Cube window opens.
4. Select **Data Type** or **Data View**.
 - A data type comprises business process and manager attribute forms
 - A data view comprises results from a data base query

Note

When creating data cubes, data views are only seen when you select Data View as the source. This is different from UDR creation when data views are listed with data types.

5. Select a business process from the drop-down menu.
6. Select **OK**. The Data Cube window opens.
7. Complete the General tab.
 - Name**: enter a unique name for the data cube
 - Description**: this field is optional
 - Data Type**: this read-only field is automatically completed with the data type selection
 - Type**: this read-only field is automatically completed with the level selection
8. Select the **Data Source** tab. On this tab you can add the data sources you want to include in the data cube, for example, a business process, query-based tab, workflow, or shell.
9. Select the **Add** button. The Data Sources window opens listing all available data sources for this data cube.
10. Select at least one data source. You cannot move to the next tab or save the data cube without a data source selection. You can add as many data sources as are available.
11. Select the **Data Elements** tab.
12. Select at least one data element. You cannot save the data cube without a data element selection. You can add as many data elements as are available. The selected data elements are arranged in the Data Elements pane in a grid.
 - **Data Source**: The data element data source.
 - **Label**: The data element label. You can modify this label.
 - **Name**: The data element name.
 - **Type**: The data element type.

- **Group:** Select to define whether the data element can be used as a Grouping element when the data cube is used.
- **Summary:** Select to define whether the data element can be used as a Summary type.

On this pane you have the option to add functions. To do so, select **Add Functions**. Select a function type: Formula, Date Difference, Date Add, Date Function.

- For **Formula** select **Create**. Create a formula and select **OK**. The data source available for the formula are based on the data sources you selected in the Data Sources tab.
- For **Date Difference** enter a column heading name, specify the dates, and whether to show partial days. Select **OK**.
- For **Date Add** enter a column heading name, specify the date and the add function. Select **OK**.
- For **Date Function** enter a column heading name and specify the date. Select **OK**.

To modify a data element, select the data element and select the **Modify** button.

To remove a data element, select the data element and select the **Remove** button.

Use the **Move Up** or **Move Down** buttons to reorder the listed data elements.

13. Select the Query tab if you want to add one or more queries to the data cube. See [Define Report Queries \(Query Condition\)](#).

Data Cubes and Configuration Package

Data Cubes are used for creating Shell dashboards. Data Cubes defined in the **Development/Test** environment can be transferred to the **Production** environment.

You can pick and choose which Data Cubes to transfer by including the needed Data Cubes in the Component List and creating a Configuration Package by using the list.

The Data Cubes log contains the following columns:

- Name
- Description
- Type
- Source
- Last Modified
- Published Date
- Last Published By

When the configuration package is created, the system will check to ensure that the Data Cubes that have been included are in Publish status or not. If the Data Cubes that have been included are not in Publish status, an error message is displayed at the time of creating the configuration package.

Defining Queries

To define queries for data cubes:

1. Select the **Queries** tab.
2. Build a query.

See [Define Report Queries \(Query Condition\)](#).

3. When you have finished working with the Data Cube window tabs, select **OK**.

Granting Permissions for Data Cube

To grant permission for data cube creation, modification, or viewing:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Data Structure Setup**, and select **Data Cube Definitions**.
4. In the **Module Permission Settings** window, select **Add**.
5. In the **Permission/Access Control** window, select **Add Users/Groups**.
6. In the upper section of the **Users/Groups Picker** window, select the intended users or groups, and select **Add**.
7. Select **OK** to return to the **Permission Settings** window.
8. To assign permissions to user or groups in the **Permission Settings** window:
 - a. In the upper section, users or groups selected in the previous steps display.
 - b. In the lower section, select the appropriate level of access for the users or groups selected in the upper section.
 - **Create/Modify**: You must have **Create/View** permission to create or define or change data cubes. This setting includes **View** permission.
 - **View**: You can use this setting to allow users and groups to see the data cubes.
 - c. Select **OK**.
9. Perform any of the following actions:
 - Select **Apply** to save changes and keep the window open.
 - Select **OK** to save changes and close the window.

Publishing Data Cube

You must publish data cubes to make them available for use in the configurable dashboard.

To publish data cubes:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Cube Definitions**. The Data Cubes log opens.
3. Select a data cube, and select **Publish**.

Note

You can modify a published data cube, but you must republish it to make the changes available to users.

Creating Partitions for BP Tables

Creating partitions for large business process (BP) tables, such as those whose number of rows exceeds 500 thousand, improves query performance. As explained in the Oracle database documentation, partitioning a database creates smaller, more manageable pieces, while not impacting the structured query language (SQL) queries. Because a large data set might cause performance issues when the system is loading BP logs, sheets, grids, pickers, and so on, you can use the Table Partitions option under Data Structure Setup to create a partition for specific BP tables that have large data sets, such as those that contain in excess of 500 thousand records.

Note

- Partitioning is *irreversible* and might affect system performance while it is in process; Oracle recommends that you run partitioning during off-peak hours for your organization.
- At this time, only the tables for Simple and Line Item BPs defined at the project/shell level are available for partitioning; single-record BPs and company-level BPs are excluded.
- The performance improvement achieved by implementing this feature depends on your environment and how Unifier is implemented. In particular, the design of BPs and their components affects the performance of subsequent searches.

Step 1: Verify that your database meets prerequisites. To use this feature, make sure that your Oracle database meets the following prerequisites. It must:

- Use Oracle Database Enterprise Edition.
- Have partitioning enabled. By default, partitioning is enabled for Oracle Cloud-based Unifier environments. For more information about partitioning an Oracle database, go to the [Oracle Database Documentation](#) site, search for **partitioning**, and select your database version.

Step 2: Set permissions for creating, updating, and viewing table partitions. See [Granting Permissions for Table Partitions](#).

Step 3: Create or update partitions. See [Creating or Updating Table Partitions](#).

Step 4: Monitor partition status and history. See [Monitoring Table Partitions](#).

Granting Permissions for Table Partitions

You can grant view-only or create and modify permissions to groups or users of both your company (the owner/sponsor company) and to those of partner (member) companies.

Note

In addition to the following process, you can also update permissions through the **Permissions** tab for individual users in **Company Users** and **Partner Users**.

To grant permission for viewing, creating, or updating table partitions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Data Structure Setup**, and then select **Table Partitions**.
The **Module Permission Settings** window opens. Here you can add, modify, or remove permission settings.
4. In the **Module Permission Settings** window, select **Add**.
5. In the **Permissions Setting for Table Partitions** dialog box, select **Add Users/Groups**.
6. In the **Users/Groups** window, select the intended users or groups, and select **Add**.
7. To return to the Permissions Settings for Table Partitions dialog box, select **OK**.
8. In the **Select Users/Group** section of the window, select the users or groups, and then select the applicable level of access for the user or group in the **Permissions Settings** section.
 - **Create/Modify:** Lets the selected users and groups create or update table partitions. This setting includes the View permission.
 - **View:** Lets the selected users and groups view the **Table Partitions** log.
9. To save your selections and return to the **Module Permission Settings** window, select **OK**.
10. Select **Apply** to save changes and keep the window open, or select **OK** to save changes and close the window.

Creating or Updating Table Partitions

When you access the **Table Partitions** page, it might display a log that lists tables that contain more than 500 thousand rows, or it might display one of the following messages:

- **No tables available.** This message indicates that partitioning is enabled; however, there are no tables that currently exceed 500 thousand rows.
- **Permissions to create table partitions.** If this message is displayed, particularly if you are using an on-premises environment, it indicates that you do not currently have the applicable user permission in the Oracle database schema for Unifier to create partitions. You must have the **select** permission for the **v\$option** and **gv\$sql_monitor** tables. For more information, contact your systems or database administrator.
- **Table partitioning is not enabled.** If this message is displayed, particularly if you are using an on-premises environment, it indicates that partitioning is not enabled for your Oracle database. For more information, contact your systems or database administrator.

If there are tables that contain more than 500 thousand rows, the log lists information for each applicable table such as the name of the BP, an indication of whether the table is for a BP or a line item, a status that indicates whether the table has been partitioned, and so on.

When you create a partition, the system evaluates the selected table and provides suggestions based on the following:

Number of Rows in the Selected Table	Recommended Number Partitions	Maximum Number of Partitions
>=500K and <1M	4	8

Number of Rows in the Selected Table	Recommended Number Partitions	Maximum Number of Partitions
>=1M and < 5M	8	16
>=5M and <10M	16	32
>=10M and <50M	32	64
>=50M and 1B	64	128
>=1B and 5B	128	256
>=5B	256	256

After you have partitioned a specific table, you have the option at a later time of redistributing the data across the recommended number of partitions or selecting a higher number of partitions. This is known as repartitioning.

To create a table partition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Table Partitions**.
3. In the **Table Partitions** log, review the list of tables carefully before continuing. As explained earlier, only the tables for Simple and Line Item BPs defined at the project/shell level are currently available for partitioning, partitioning cannot be reversed, and performance improvement is dependent on how your BPs are designed.
4. Select the table that you want to partition, and select **Create Partitions**.
5. In the **Choose number of partitions** dialog box, select **Continue** to accept the recommended number.
The system checks the unique ID numbers for the table and evaluates the information based on the table provided earlier. It then selects the number of partitions based on what is smaller; for example, if the number recommended for the row count is 16, but the number of unique ID numbers is 9, the recommended partition number is 8. You can choose a different option from the list instead of accepting the recommended selection.
6. When the **Create partitions** confirmation message appears, review the statements.
7. If you are ready to continue, select **Create**.
If a selected table is currently in use for another reason, such as a configuration package or BP package is being deployed, the system displays a message that indicates partitioning cannot be completed at this time. When you know that the other activity has completed, you can try creating the partition again.

After partitioning commences, you can monitor its progress. See [Monitoring Table Partitions](#). When partitioning completes successfully or an error occurs, the systems sends and email to the user who initiated the partitioning request.

Note

If a partition job is in progress for a BP table, you cannot deploy a related BP design until the partition job completes or fails.

To update (repartition) a table partition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Table Partitions**.

3. In the **Table Partitions** log, select the table that you want to partition again, and select **Repartition**.
If the selected table cannot be repartitioned, the system displays a message.
4. In the **Repartition** dialog box, select **Repartition** to accept the recommended number.
5. When the **Repartition** confirmation message appears, review the statements.
6. If you are ready to continue, select **Create**.

Monitoring Table Partitions

You can use the Table Partitions log to view detailed information about each table, check the status of a partition or repartition job, and see the detailed history of each job.

Statuses displayed on the log include:

- **Partitioned:** Indicates that this table has been partitioned.
- **Not Partitioned:** Indicates that this table has not been partitioned.
- **In Progress:** Indicates that this table is currently getting partitioned.

When you view the History tab for a selected table, statuses include:

- **In Progress:** Indicates that this table is currently getting partitioned.
- **Completed:** Indicates that this table has been partitioned.
- **Failed:** Indicates that this table has not been partitioned.

To check the status of a job or a partition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Table Partitions**.
3. In the **Table Partitions** log, review the information displayed in the **Status** column for the applicable table.
4. To view additional information, select the applicable table, and select **View History**.
The History tab displays more information about the status of current and previous jobs for the selected table. For example, if a job completed, the tab includes both the start date and the end date. If a job failed, it provides more information about the error that occurred.

Setting Up Shells

A shell is where users can organize business information in one place to make managing it easy. You can use a shell to organize the information about projects, or facilities, in one place. A shell includes functions and features that are necessary for managing the information about projects, or facilities, within that shell. A shell is not required to function like a project.

Shell Administration and Setup

Settings up shells involves setting up permissions at several points during configuring and creating shells, so the users have access to various aspects of working with the shell.

Shell administration and setup involves the following steps:

Note

The following presumes that the shell types have been designed and imported to the Company Workspace.

1. Setting permissions for configuring the shells, in the Shell Manager.
2. Configuring the shells, in the Shell Manager.
3. Setting permissions for administering the shell templates that can be used to create shells.
4. Creating shell templates.
5. Setting permissions for adding, or modifying, shells.
6. Creating new shells for use.

Importing Shells

All designs, including shell designs, are designed in uDesigner and deployed to Unifier. See [Importing Configuration Packages](#) for more information.

About importing forms that contain data pickers

Data pickers point to a data source for the records they display. A data source can be a business process, shell, space, planning item, or manager class. If the data source that the picker is pointing to is not in the system already, the application will warn you.

The business process will not operate correctly until the data source is imported.

CSV import or RESTful Services (Create Shell)

When you create a shell instance by using CSV import or RESTful Services (Create Shell), the system copies the following into the created Shell:

- The **View Forms** tab information from the selected shell template.
- The forms added in the shell template, along with users and groups who are part of the viewers list.

Setting Permissions to Configure Shell Types in the Shell Manager

After shells are created, for the Users or Groups to be able to access various aspects of working with shells, you (the administrator) need to grant access, or permissions, to the Users or Groups at several points during the shell setup, or alternatively attain all the permissions from the shell template. When a shell is created, the permissions that have been set at the template level will be copied over.

To set up permissions to configure shell types in the Shell Manager:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Configuration**, expand **All**, and then select **Shell Manager**.
For more information, see *Edit User or Group Permissions Using Access Control*.
4. Select **OK**.

Configuring Shells

Configuring a shell consists of activating it and organizing it into a hierarchy.

Note

Before you configure shells, Oracle recommends that you plan the shell hierarchy with your users and uDesigner user. The instance, and cost settings, affect how you will use the shell and its relationship to other shells. Planning will help you achieve the result that will meet your business needs.

As the administrator, you can configure the project numbering and the status of each project/shell type. As part of the numbering scheme, you can enable and disable automatic numbering and you can update the format and starting number. The system implements the new settings for records created *after* the change is implemented and ensures that unique labeling is maintained. If you change the value of Format or Start, the system cannot guarantee that the selected sequence is available due to possible conflicts with existing data and might alter the selected information to prevent a conflict. Changing this information might also create gaps in the numbering sequence.

Example: If you specify a Format of ABC and a Start of 0001, and records ABC0001 through ABC0015 have been created, and you then change the Format to DEF and the Start to 0001, the system starts generating new records with DEF0001. If you change the Format to back to the original ABC and a Start of 0001, the system will begin the sequencing of new records using ABC0016.

To configure the shell types in the Shell Manager:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Shell Manager**.
3. Double-click the applicable shell type.
The <shell name>-General Configuration window opens.
4. On the **General** tab, complete the following fields:
 - **Enable Automatic Numbering:** To allow automatic numbering of projects based on the specified **Format** and **Start** values, select this option. You can deselect this checkbox to disable automatic numbering; it is selected by default.
 - **Format:** If you enable automatic numbering, specify the format of the numbering schema. By default, **Format** is blank.
 - **Start:** If you enable automatic numbering, specify the starting number. Start determines the starting number of the numeric schema. By default, **Start** is 0001.
 - **Cost Codes:** This read-only field displays the type of cost code specified in uDesigner for the shell type.
 - **WBS:** Standard Cost Manager
 - **Generic:** Generic Cost Manager
 - **Status:** Select the applicable status, **Active** or **Inactive**. Users cannot access shell types that have an **Inactive** status. The default is **Inactive**.

Note

If a project/shell is open and visible when its corresponding shell type is changed to Inactive, you cannot create a new shell of the applicable type but existing shells are not affected.

5. Select the **Organize** tab.
On this tab you can specify the sub-shell types that are allowed under the selected shell type. For example, assume you have configured a shell called Region, which has the sub-shell types Properties and Buildings. Also, Properties has Buildings as a sub-shell. The system performs validation during shell configuration, and manages the relationships among the shells that you configure. The table below shows the relationships among the shells described above.

To add sub-shell types from the list of imported shells, select **Add** and select the applicable types. You can only add shells that have an Active status.
6. Select the **Active** checkbox for the sub-shell types you want to activate.
You can deactivate sub-shell types that you do not want users to use for sub-shell instance creation. You can deactivate a sub-shell type even if sub-shell instances have been created with that type.

Note

You can remove a sub-shell type from the list by selecting **Remove**, if an instance of the sub-shell type is not created under the shell.

7. When you are done, select **Save**.
8. Complete the configuration steps for each shell type.

Shells->	Parent	Child	Grandchild
Sub-shells that are allowed			
Parent	No	No	No
Child	Yes	No	No
Grandchild	Yes	Yes	No

Update Generic Cost Sheet Columns and Rows

You may have a large number of codes that are used within the Generic Cost Manager. In addition, you may have a large number of shells in your implementation. To update codes and columns in your generic cost manager sheets with a minimal effort, you can push columns in a project/shell template generic cost sheet from the Columns Log to cost sheets.

About updating shell instance dashboards

A cost sheet must exist in the destination shell. Pushing a column from a template will not create a cost sheet that can receive the column.

You can push one column at a time.

If a source column is a single data source and the column does not exist in the destination, the destination column is created with that single data source if it does not exist. (Column A or B in example below)

If a source column is a formula with only a single data source and the column does not exist in the destination, pushing the source column creates that column in the destination cost sheet. (Column C in example below)

If a source column is a formula with columns included in the formula and if all constituent columns contain single data sources, the source column can be pushed. For any columns that do not exist in the destination cost sheet, the formula is changed to a single data source in the formula. (Column D in example below)

If a source column is a formula with constituent columns that include logical data sources, the logical data source must exist in the destination cost sheet. The formula for the logical data source may be different in the destination cost sheet. Any column that contains a single data source will follow the rule above. (Column F in example below)

Column	A	B	C	D	E	F
Column Name	Original Commitment	Change Orders	Pending Commitments	Total Commitments	Trends	Forecast
Data Source	Purchase_Order (Approved)	Change_Orders (Approved)	CM011	CM012	Trends(Open)	CM013
Formula			Purchase_Order (Pending) + Change_Orders (Pending)	Original Commitment + Change Orders		Total Commitments + Trends

To add or update generic cost sheet columns from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.

4. In the left Navigator, select **Configurable Modules**, and then select **Generic Cost Manager**.
5. Select the **Generic Cost Manager Sheet** template, and select **Structure**.
6. In the **Generic Cost Manager Sheet: Structure** window, select **Columns**.
7. In the **Columns Log**, select a cost sheet column.
8. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that were designed in uDesigner. When you have isolated the shells to update, select **Update**.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

9. To proceed with the update, select **Yes**.

To update generic cost sheet rows from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **Configurable Modules**, and then select **Generic Cost Manager**.
5. Select the template, and select **Structure**.
6. Select a row or rows to push to the project/shell-level generic cost sheet. You can select multiple rows by holding down the Shift or Ctrl keys as you select the rows. The application will update leaf-level rows, but not summary rows.
7. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to choose which shell(s) to update. You can use Find to search for specific shells to select from the complete list of shells. You can select as many shells as you want to update. The Page and Display fields display on the Shell Update window, but are disabled in this case.
 - **All Shells**: Use this option to update all active and on-hold shells
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens, detailing the information that will be updated. Read the message carefully, as this action cannot be undone after a shell is updated.

8. To proceed with the update, select **Yes**.

Update Standard Cost Sheet Columns

To update columns in your cost manager sheets, you can push columns from the Cost Sheet Columns log to cost sheets in each shell and shell template. This ability to update columns includes adding formula-based columns from the cost sheet within a shell template to the

destination even if the columns do not exist in the destination. If column formulas contain data sources that are not other explicit columns and thus not visible, these data sources are applied in the same manner and remain hidden in the destination. For example, if your source cost sheet includes a column called "CARs Pending" that is based on a formula of `CAR_Pending + CAR_Pending_Int`, but "CAR_Pending_Int" does not exist in the destination cost sheet, the system inserts the additional column and reflects the update to the formula.

Note

You might want to perform this task if you are using formula-based columns that are based on BPs and you change the name of the BP. The formulas for the columns are not automatically updated when you change the name of the BP. For example, if your Project Cost Sheet includes a column such as **Contract & PO** that displays **Agreement (Approved) + Change Order – Contract (Approved)** when you hover over the column heading and you subsequently update the BP name from **Change Order - Contract** to **Change Order**, the information displayed in the hover label is not updated. You can use the following process to update the applicable columns in your cost sheets. You can also manually update the hover label by right-clicking the column name, selecting **Properties**, clicking **Select** in the **Formula** section, and making the applicable changes.

A cost sheet must exist in the destination shell. Pushing a column from a template will not create a cost sheet that can receive the column.

To add or update cost sheet columns from a template:

1. Go to the **Company Workspace** tab, and switch to Admin mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **Cost Manager**, select **Cost Sheet**, and open the **Cost Sheet** template.
5. From the toolbar, select **Menu Options**, select **Columns**, and then select **Manage Columns**.
The Cost Sheet Column window opens.
6. If applicable, drag and drop the listed columns to the order that you want to use.
7. Select the column, or columns, that you want to use in the update.
8. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the **Update Shells** window opens, it lists all shells in the project. You can use Search or Find on Page to isolate the shells you want to update. The find window contains data elements from the Find form that was created in uDesigner. After you have isolated the shells to update, from the toolbar, select **Update Shell(s)**, and select either **Selected Shell(s)** or **All Filtered Shells**.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

9. To proceed with the update, select **Yes**.

Configuring Shell Manager Configuration Package

The following configurations can be included in the Shell Manager Configuration Package:

- General setup
All the fields included in the General Configuration (General tab).
- Organize setup
All the fields included in the Organize tab.

Note

- The sub-shells defined in the Shell hierarchy are also included in the Configuration Package.
- The sub-shells defined in the **Organize** tab are included in the Configuration Package.
- You can export the sub-shells.

For more information, see [Configuration Package Management](#).

Setting Permissions to Administer Shell Templates

To set Shell Template administration access:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Templates**, expand **Shells**, and select the **[shell node]**.
For more information, see Edit User or Group Permissions Using Access Control.
4. Select **OK**.

Accessing a Created Shell Template

From the **Shells** node under **Templates**, you can access the shell type templates that are created. You can also designate a specific shell as the default shell that should be used when projects/shells are created.

One node is created under **Shells** for each shell type that is imported and that has an active configuration status.

Note

Single-instance shells are not listed under **Shells** as there can only be one instance created for those shell types, and there is no need of a template.

To access shell templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Expand the **Shells** node.
Shell templates are grouped by shell types. One node is created for each shell type imported. For example, Buildings, Linear Assets, Projects, and so on.
4. Select one of the shell type nodes, for example **Projects**, to view the log for the shell type. The applicable log opens. The log lists any project templates that have been created for that shell type.
5. To designate a shell as the default, select the *gear menu* () , and select **Mark as Default**. The **Default** column displays **Yes** for the applicable template. If you want to clear the **Default** label, select **Reset Default** from the *gear menu*.

Create a Shell Template Manually

The following procedure describes how to create a shell template.

To create a shell template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and select the [shell type].
The <shell> Templates log opens. The log lists any shell templates that have been created under that particular shell type.
3. From the toolbar, select **Create**, and then select **Manual**.
The <shell> templates Details window opens.
4. On the **General** tab, complete the fields as described in the table below.

Note

The General tab that you see will depend on the Shell Attributes form that was imported. Required fields are marked with an asterisk (*).

5. On the **Currency** tab, select the **Add** button.
The New Currency window opens.

Note

The **Base Currency** shown at the top of the window is the Base Currency set up for your company. For example, if your company is located in the U.S., the Base Currency will likely be United States Dollar (USD). If your company does business internationally, you may make other currencies available for shell use.

- a. Complete the **New Currency** window:
 - To access the Currency Picker dialog box, select the **Select** icon in the **Currency Name** section.
 - Select a currency from the list and click **Select**. The available currencies were defined at the time your company was set up. (The currency list is maintained in the **Exchange Rates** sub-node of **Standards & Libraries**.) Contact your Company Administrator if you need additional currencies.

- b. If the currency you selected is different from the company Base Currency, complete the following:
 - **Rate:** Enter an exchange rate to use for conversion calculations.
 - If **Float** is selected, the rate comes from the company active exchange rate set (**Exchange Rates** sub-node of **Standards & Libraries**).
 - A **Peg rate** is locked at the rate set. (Only an administrator can change the Peg rate, or Peg to Float or Hedge.)
 - If the **Hedge** selection is **Yes**, the **Hedge rate** is used. Otherwise, the **Float** rate will be used. If an amount is entered for the Rate, then the hedge rate is used until the amount specified is reached (by spends) and then the system will revert back to the active exchange rate.
- c. If applicable, enter information in the **Comments** box.
- d. Select **Save** to save and exit the New Currency window.
- e. The first currency that you add is selected as the default currency for the shell. If you add multiple currencies, you can select a different **Default Currency** from the drop-down list. This will be used as the default shell currency. After you have selected a shell currency and saved the template or shell, it cannot be changed. The selections are generated from the Currencies list you defined.

Note

You cannot modify this default currency after you save the changes to the template Details window.

6. On the **Images** tab, select **Browse (+)** to locate and upload any applicable graphics from your computer.
You can upload an image to display on the landing page of the shell in both Administrator and User modes.
7. On the **Options** tab, complete the applicable fields.
You can select the phase of the shell on this tab. The phases available are based on the Phase data definition.

Within the Shell Details, the user can select which attributes forms to use for the Document Manager, for both folders and documents.

From the **Options** tab, the user can define which attribute form (**Document Manager Attribute Form**) to use for the document/folder. By default, the "DMS Attributes" folder properties attribute form, which is system-defined in Document Manager, can be selected, and the corresponding **Document Manager Attribute Form** is used to determine the DMS structure. The user will have an option to choose other attributes forms as well. Only the active DM configuration forms will be available for selection.

In case a previous active **Document Manager** configuration (in a shell) is marked as inactive, the DMS structure keeps that attribute form structure. When you open the shell details, the **Document Manager Attribute** is defaulted to system-defined attribute form because the previous configuration has been marked as inactive. The **Document Manager Attribute Form User** will show the previous DM attribute form that is kept by the shell. If you select **OK**, the system displays a message, informing you of this change.

In case a previous active **Document Manager** configuration (in a shell) is deleted because the associate folder attribute form was deleted, the DMS structure is defaulted to the system-defined attribute form of a supported DMS structure for the shells. When you open the shell details, the **Document Manager Attribute** is defaulted to system-defined

attribute form because the previous configuration has been deleted. The **Document Manager Attribute Form Used** will show the system defined DM attribute form that is kept by the shell. If you select **OK**, the system displays a message, informing you of this change.

Project/Shell Creation BP behavior

While creating Project/Shell creation BP records, the shell template that has been selected via the shell picker keeps the folder properties attribute form that is mentioned in the respective templates and have the DMS structure accordingly.

Company behavior

The Company Workspace Document Manager is defaulted to the DMS attribute, which is system-defined.

The **Options** tab also lets you select the entity that provides electronic signature technology (**DocuSign** or **Acrobat Sign**). For Projects/Shells, the value for the E-Signature Type drop-down list is: **Default**. For more information, see *Selecting and Configuring a Default System for E-Signatures*.

Note

If a value (E-Signature Type) has been determined in the **Acrobat Sign** or **DocuSign** functional nodes under the **Integration** grouping node, the value of the E-Signature Type drop-down list (Standards tab) will be read-only.

You can select a different value from the E-Signature Type drop-down list.

The Company Administrator can use the **Acrobat Sign** or **DocuSign** functional nodes under the **Integration** grouping node to change the default value. This change does not impact the value of the E-Signature Type in the project, and the values will remain as:

- Company Default
 - DocuSign
 - Acrobat Sign
8. Complete the **Links** tab to add links to the shell.
These links are displayed on the shell landing page in User mode. Use links to provide users with access to useful websites, your company's website, an intranet, or other destinations. Select **Add** and enter the name and URL for the links you want to add to the landing page.
 9. On the **Calendar** tab, create a shell calendar.
Each shell can have its own calendar. You can use the:
 - Specified shell calendar to override the company calendar.
 - Company calendar for the shell.
 - Company calendar (marked as default calendar) for the shell if there is no shell calendar, or if the shell calendar is not being used.

Shell calendars can be based on Standard Calendars created at the Company level, or Custom Calendars created for the specific shell. The shell calendar you create applies only to the shell for which you create that calendar. The calendar selected affects shell durations and due dates. For example, companies can have multiple projects in different countries that have different working and non-working days. These working and non-working days must be considered when determining such time-driven factors as business process workflow due dates and activity dates.

Note

Unless otherwise specified, the default calendar for a shell is the Company calendar that is marked as default at the Company level.

- a. Open the Calendar tab of the shell or Template window. The calendar you create in this tab is known as the Project/Shell Calendar.
- b. You can select a company-level Standard Calendar, or use a Custom Calendar for your shell. The calendar that you select displays in the Calendar tab.
 - To use a Standard Calendar as the shell calendar, select the Standard Calendar radio button and select a calendar from the drop-down list.
 - To use a Custom Calendar as the shell calendar, select the Custom Calendar radio button and select Copy. You can copy a previously-created Standard Calendar and use it as the project calendar.
- c. You can modify the displayed calendar. You can specify the working and non-working days for the calendar. Browse to the month and year using the pull-down menus at the top of the calendar. Saturdays and Sundays are set as non-working days by default. Do one of the following:
 - To set a particular date as a non-working day (for example, a holiday), select the date on the calendar and select **Non Working**. The date will appear grayed out, and will not be used in date calculations.
 - To set a non-working day as a working day, select a grayed cell and select **Working**.
 - To set a particular day of the week (for example, every Saturday) as a non-working day, select the day at the top of the calendar (for example, "Sat"), then select **Non Working**. All Saturdays in the calendar will be changed to non-working days (gray).
 - To set a particular day of the week as a working day, select the day at the top of the calendar, then select **Working**.
 - If you only want to set the day of the week in a particular month as working or non-working days, select each day individually and select **Working** or **Non Working**.

Note

If you have marked the day of the week as a non-working day throughout the calendar by selecting the day at the top of the calendar (for example "Sat"), then you will not be able to mark individual days (that is, individual Saturdays in this example) as working days. To be able to include both working and non-working instances of a day of the week on the calendar, you must select them individually.

- d. Select **OK**. When you select OK, the calendar displayed in the Calendar tab is the shell calendar.
10. When you are ready to save information and exit the window, select **Save**.

In this field	Do this
Description	Enter a description of the shell type template.

In this field	Do this
Administrator	Select an administrator for the template.
Location	Disabled for template creation.

In this field	Do this
Status	You can activate the shell immediately, or place it On-hold and activate later. A template that is On-hold or Inactive cannot be used to create a shell. It is good practice to leave a shell or template On-hold until you have completed the setup. Shell Administrators/Users with "modify shell status" rights are the only ones who can change the status. The Shell Administrator will receive email notification when the status of a shell changes. The change of shell status could occur due to a manual change, bulk update, through Web Services or a CSV file, or through automatic update. Status definitions for shells are: • Active: Active, in-progress shell. All shell actions in User and Admin mode are available. • On-hold: The initial shell status. On-hold shells appear on the shells log. Shell administration functionality is available to shell administrators for setup and maintenance for users with permissions to perform that function. Users cannot create records in a shell that is On-Hold. If a user attempts to access a shell that is On-Hold, the system displays an alert message stating that the shell is On-Hold. • View-Only: For end users, View-Only shells can be viewed, printed, exported, and included in reports. They cannot be modified. When a shell is View-Only, the status overrides (but does not modify) access control permissions, granting only View permissions. The shell reverts to the access control permissions when the shell is made Active. View-Only shells can roll up to UDRs and dashboards. Business process records cannot be auto-created in View-Only shells. Data from View-Only shells rolls up to Generic Cost Manager cost sheets if all the shells in the hierarchy are generic. Data rolls up to dashboards on a View-Only shell from child shells in the hierarchy, and rolls up to a parent shell from a View-Only shell. No updates can occur to View-Only projects through Integration, Mobile, or through reverse auto-population. View-Only shells cannot be updated through templates. Consolidate line item functionality is disabled for View-Only shells. Users can navigate through the shell hierarchy using View-Only shell instances. View-Only shells have only view, export, and print permissions available. Tasks and Drafts are not available for View-Only shells. Messages are available, but users cannot add general comments. Mailbox is available for viewing, but users cannot send, edit or delete messages for View-Only shells. When a shell becomes View-only, all scheduled jobs associated with it are canceled. When the status of the shell changes back to Active, you must restart any scheduled jobs. Administrators can perform all actions on View-Only shells. • Inactive: Used to suspend shell usage. Inactive shells are visible from Admin mode under Sponsored Shell log only, but not visible under the Shells node (that is, only Sponsor Company can

In this field	Do this
	access the shell), or in User mode logs and selections. Only System and Shell Administrators (users with Modify Status rights) can reactivate the shell. Note "Late" tasks in an inactive shell may still show up in users' tasks logs. Though they can access the task, no transactions can be performed in the inactive shell.
Auto-update Status Setup	The selections on the drop-down list are defined automatic status update setups. These setups are defined at the Company level for use in specific shells. For more information, see Setting Up Automatic Update of Shell Status . If you decide not to use the automatic status update, you can deactivate it by deselecting a setup (by literally selecting the word "Select").
Shell Number	Unique number that identifies the shell.
GeoCoding	Details for mapping. This field appears if geocoding was set up in uDesigner for the shell.

Note

After a currency is selected and saved, it cannot be modified. The remove option is made available so that you can remove the additional currencies and unsaved changes.

Create a Shell Template by Copying a Template or Shell

You can create a Shell Template by copying from an existing shell template or an existing shell. The **Copy From Shell Template** and **Copy From Shell** pages list all templates and shells, respectively, that are designated as **Active**, **On-hold**, or **View-Only**.

To create a shell template by copying an existing shell or shell template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select a shell type.
3. From the **Create** menu, select **From Template** or **From Shell**.
You can use the **Search** and **Find on Page** options to look for a specific shell or template in the list.
4. In the **Select Modules** pane, select the modules to include in the new template.

The modules available depend on the cost code type of the shell or shell template (CBS or Generic). See [Shell Cloning Window Selections](#) for the lists of available modules by cost code type.

5. After you are done selecting the modules to include, select **Done**.
6. In the template **Details** window, update the applicable tabs and fields.
Most properties are copied from the original shell or template with the following exceptions:
 - **Currency:** On the Currency tab, specify the Shell Currency
 - **Image:** On the Images tab, specify the Shell Image (optional)
 The status is set to On-Hold.
7. Select **Save**. Select **Yes** to confirm.

Shell Cloning Window Selections

In a shell log, when you select **Copy**, the cloning window lists optional calendar, module, manager, sheet, and structure selections. You must select an item to include it in the new shell. See [Create a Shell by Copying a Template or Shell](#).

Cloning Window Selections for All Shell Templates and Shells (Both CBS and Generic Codes)

The following is a list of the selections:

- **User/Groups:** This is not an optional selection; users and groups in a template or shell are always included by default.
- **BP Setup:** You have the option to copy all, or none, of the business processes and their setups that are in the template or shell.
Templates do not allow record creation of multiple-record business processes, but they do allow record creation of single-record business processes (go to the shell tab, and switch to **User** mode; in the left Navigator, select **Information**, and then select **General**). If you added a single-record business process into the template or shell and created a record, that record with all its data is cloned when you select this option.
- **Configurable Modules** (and then select **Configurable Managers (CM1 through CM25)**): Configurable Managers are designed in uDesigner and have flexible coding structures to data collection and analysis. Each manager appears in the module selection pane by its unique name.
- **Custom Calendars:** Custom calendars provide a means to address variations in work schedules, holidays, and other non-working days. You can add custom calendars to a shell detail form on the Calendar tab.
- **Dashboard Setup:** Shells and templates may have multiple dashboards, each governed by unique permission settings.
- **Document Folder Structure:** Folder templates help standardize document organization in the Document Manager.
- **Gates Setup:** Gates provide a means of automating when a project moves to the next phase.
- **Resource Manager:** Manage personnel resources using the Resource Manager, if you have access to the feature, which was deprecated starting with version 23.10.
- **Space Manager:** Manage levels and facilities using the Space Manager.

- **User Defined Reports:** You can create multiple user-defined report templates and include them in the new shell during cloning.

Cloning Window Selections Only for Generic Code Shell Templates and Shells

The following is a list of selections.

- **Commitment Summaries:** In the same way the schedule of values summarizes all cost information related to a particular commitment business process, the commitment summary tracks commitment record information.
- **Generic Cost Manager (CM0):** The Generic Cost Manager captures cost-related transactions for a generic shell. Each generic shell can have one Generic Cost Manager.

Cloning Window Selections Only for CBS Code Shell Templates and Shells

- **Cash Flow:** Cash flow is the distribution of cost over time— in project management terms, it is the movement of cash into or out of a project measured during a specific time period.
- **Commitment Funding Sheet:** A funding sheet tracks project funding —where it comes from and how it is being spent. You can create one funding sheet per template or shell. See [Setting Up the Funding Manager](#).
- **Cost Sheet:** The cost sheet provides detailed tracking of the project's budget and costs. You can create one cost sheet per template or shell. See [Setting Up Cost Sheets](#).
- **Schedule of Values:** The schedule of values summarizes all cost information related to a particular commitment business process. See [Setting Up Schedule of Values \(SOV\)](#).
- **Rules:** Project cost or funding rules impose conditions on project transactions per rule queries. See [Creating Rules and Rules Templates](#).

Shell Template Modules and Managers

In shell templates you can prepare modules and managers to make standardized templates, which ensure project uniformity and greatly reduce the potential for errors. You can have different templates for different project models. For example, you can have one template for "cookie-cutter" projects that do not change, and you can have another template for projects that might incur substantial changes. The system will copy any prep-work when you use the template to create a new shell, a process called cloning. Manager and module availability can differ depending upon CBS or generic code specification in uDesigner. See [Create a Shell by Copying a Template or Shell](#).

Managers and Modules Available in all Shell Templates (Both CBS and Generic Codes)

The following lists the managers and modules that are available in all Shell Templates for both CBS codes and the Generic Codes.

Member Companies

To make Partner Companies that you added at the company level available in your projects, you add them in Member Companies. Member Companies added to a shell template automatically copy to a shell during cloning. For more information, see [Managing Member Companies](#).

Access Control

For modules and managers included in a shell template, you can assign user-mode permissions. Permissions set in a template will automatically copy to a shell during cloning. Keep in mind, records created in user mode may require permission assignment in user mode.

User Administration

Users and groups added to a template are copied by default from the template to a new shell during cloning. For more information, see User Administration.

- **Users:** Users added to a template automatically copy to the shell during cloning. Users added to shell templates cannot be deleted, only inactivated.
- **Groups:** Groups added to a template, and any users added to these groups, automatically copy to the shell during cloning.

Setup

- **Business Process:** You have the option to copy all, or none, of the business processes and their setups that were added to a template. For more information, see [General Procedures for Setting Up Business Processes](#). If you added a single-record business process to a template and created a record, that record with all its data will be copied during cloning. For more information, see [Single-Record Business Processes](#).
- **Dashboards:** You can define dashboards in a template and opt to include them when you clone a new shell from the template. For more information, see [Creating a Shell Dashboard in a Template](#).
- **Gates:** Gates provide a means of automating when a project moves to the next phase. You can define gates in a template and opt to include them when you clone a new shell from the template. For more information, see [How to Set Up Gates](#).
- **Planning Manager:** This is where you can plan for new projects and create proposals and forecasts for projects already running in the system.
- **Resource Manager:** This is where you can set up and manage personnel resources in a company, project, or shell, if you have access to the Resource Manager feature, which was deprecated starting with version 23.10.
- **Material Inventory Manager:** This is where you can manage materials within the company, project, or shell.

Information

This is where single-record business processes exist. When you clone a template, any single-record business processes are copied as well. For more information, see [Single-Record Business Processes](#).

- **Configurable Modules** (and then select **Configurable Managers (CM1 through CM25)**): Configurable Managers are designed in uDesigner and have flexible coding structures to allow data collection and analysis.
- **Document Manager:** You can create a folder structure for the Document Manager that can be used across shells. These can be created from Folder Structure Templates, or folders can be added manually. Unlike Folder Structure Templates, you can also assign users folder-level permissions (if they are in the shell template) and can import folders and folder properties.
- **Space Manager:** This is where you can manage facilities for the company, project, or shell.

- **Reports:** You can create one or more user-defined report templates, which will be used for shell-level user-defined reports.

Selections Available in only Generic Code Shell Templates

Configurable Modules and then select **Generic Cost Manager** (CM0)

The Generic Cost Manager captures cost-related transactions in a Generic Shell. These can include costs like rent, lease payments, or landscape care that are based on time scales such as monthly, quarterly or yearly. Each generic shell can have one Generic Cost Manager.

Cost Manager and then select **Commitment Summaries**

In the same way the schedule of values summarizes all cost information related to a particular commitment business process, the commitment summary tracks commitment record information. See [Setting Up the Commitment Summary Template](#).

Selections Available Only in CBS Code Shell Templates

Cost Manager

- **Cash Flow**
Cash flow is the distribution of cost over time - in project management terms, it is the movement of cash into or out of a project measured during a specific time period.
- **Cost Sheet**
The cost sheet provides detailed accounting of the project's budget and costs. You can create one cost sheet per template or shell. See [Setting Up Cost Sheets](#). Set up the standard cost sheet template and copy it into the shell template.
- **Earned Value**
The earned value module provides quantitative tracking information about project/shell status using earned value analysis. You can only set User mode permissions in a template.
- **Funding**
The Funding Manager helps you to keep track of where project funding comes from and how it is being spent. You can create one funding sheet per template or shell. See [Setting Up the Funding Manager](#).
- **Schedule of values (SOV)**
The SOV sheet summarizes all cost information related to a particular commitment business process. This is where you define structures for General Spends, Payment Applications, or Summary Payment Applications.

You can define a General Spends SOV structure by copying from an SOV template in the Templates log.

For Payment Application SOV and Summary Payment Application SOV, the structure is copied from the line item grid structure of the Payment Application Business Process. This means that you must first complete the Business Process (BP) setup for the Payment Application BP before you can create the structure. See [Setting Up Schedule of Values \(SOV\)](#).

Rules

You can define shell-level cost or funding rules. See [Creating Rules and Rules Templates](#).

Activity Manager

- **Activity Sheet**

- WBS Sheet
- OBS Sheet
- Custom Calendars

See the Activity Manager section of the *Unifier Earned Value Management User Guide* to learn more about the functionality of the Activity Manager nodes.

Shell Templates

If the Data Element (DE) "uuu_int_schedule_type" is *not included* in the attribute form, then:

- The template that has the option "Enable P6 sources" selected is not included when you want to create a Cost Sheet by selecting **New**, selecting **Cost Sheet**, and then selecting **Copy from Template**.
- The cost sheet that has the option "Enable P6 sources" selected is not included when you want to create a Cost Sheet by copying a cost sheet from a Shell instance.

If the DE "uuu_int_schedule_type" is included in the attribute form, then:

When you add a Cost Sheet to the template (using a standalone template or by Copy from other Shell instances), you can only select a "Tree" structure cost sheet.

Note

- You can select any Cost Sheet irrespective of whether the option "Enable P6 Sources" is selected or not.
- After you create a Cost Sheet, the option "Enable P6 Sources" is available for edit.
- After you add columns to the Cost Sheet using "P6 Data Sources" you cannot clear the property.
- If you remove the columns using P6 Data Sources, you can deselect the "Enable P6 Sources" option.

The value for the DE "uuu_int_schedule_type" remains blank because the DE is read-only.

Document Manager Template

Use the Document Manager template to create folders, perform actions, update shells, and find folders.

- **Create Folder:** Create folders in the template.
- **Actions:** Perform the following actions (Export, Import, Index Report, Move, Copy, Delete, Permissions) on a folder.
- **Update Shell Templates:** Use this drop-down menu to update the permissions, or the Structure & Permissions for a particular shell template or all shell templates. You can also view the update history.
- **Update Shells:** Use this drop-down menu to update the permissions, or the Structure & Permissions for a particular shell or all shells. You can also view the update history.
- **Delete:** Delete a log item.
- **Find on Page:** Find folders by filtering on the various columns.

- **Expand/Collapse:** To open or close all sub items in the log.

 Note

The Comment, Lock, Ref and BP columns are not displayed in the document template log.

Manage Shell Templates

To open the shell template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Select a shell type.
The shell templates log opens.
4. Select a shell template from the log, select the *gear menu* () , and select **Open**.

To edit shell template properties:

1. From the shell template home page, select the three dots  in the upper-right corner, and select **Details**.
The template Details window opens.
2. Select the tabs to view, or edit shell template properties.

Adding View Forms in Shell Template

You (the project administrator) can set up the View forms in shell templates. See [Setting Up View Forms in Shell Attributes](#).

When you create shells using shell templates, the **View Forms** tab information will be copied into the created shell. In addition:

- All the View forms that are added in the template will be copied into the created shell.
- All the users or groups, who are a part of the viewers list in the View forms, will become the members of the newly created shell.

Setting Permissions to Create or Modify Shell Instances

To set shell instance access:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Company Sponsored Shells**, and then select the **[shell node]**.
4. See Edit User or Group Permissions Using Access Control, and select these permissions depending on what access needs to be granted:
 - **Create:** Allows the creation of shell instances.

- **Modify Status:** Allows the modification of the status of shell instances.
 - **Modify Properties:** Allows the modification of shell instance properties.
 - **Configure User Dashboard:** Allows the configuration of the shell dashboard in **User** mode. This is the dashboard listed as **My Dashboard** in the **View Dashboard** (drop-down list) that displays for the end-user in a shell instance.
 - **Hide Audit Log:** Prevents the user from viewing the Audit Log for the Shell Attribute Form, which ensures that the user is not aware of what changes are made to the shell, when they are made, and by whom.
5. Select **OK**.

Creating a Shell

There are multiple ways to create a shell.

- Manually, from scratch
- Copying from a shell template
- Copying from an existing shell
- Importing via a CSV file
- Using a shell creation business process

When you create a shell from a shell template or by copying another shell, any shell dashboard that exists in the source template, the system copies the dashboard into the destination shell.

Create a Shell Manually

To create a shell manually:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable type from the functional nodes list.

Note

- Ensure that you configure and test shells in the **Development** environment before you import them into the **Test** or **Production** environment.
- The DE of type Rich Text DE is not available to be added to the Company Sponsored Shells.

3. From the **Create** menu, select **Manual**.
The **Details** window opens.
4. On the **General** tab, complete the fields as described in the table below.

Note

The table only lists the required fields that are common across most shells. The shell that was designed for your company will include other required and optional fields. Required fields are marked with an asterisk (*).

5. On the **Currency** tab, select **Add** (+) to add a default currency for the shell, and use the information in the table below for guidance.

Note

You cannot modify this default currency after you save the changes to the Details window. When you select **Apply** to save changes, you will receive a confirmation warning that reads: "You are about to create a new <Shell Type Name>. The default currency of this <Shell Type Name> is <Currency Name> (<Currency Code>). After the <Shell Type Name> has been created, this default currency cannot be changed. Are you sure you want to continue?" If you select **Yes**, you will not be able to change the default currency.

6. On the **Images** tab, select **Browse** (+) to locate and upload any applicable graphics from your computer.
You can upload an image to display on the landing page of the shell in both Administrator and User Modes.
7. Select the **Options** tab, and complete the fields.
You can specify a phase of the shell, select a time zone for background jobs, and configure email notification. (For information on this mailbox, see Dedicated Mailbox for Shells.)
8. Complete the **Links** tab to add links to the shell.
These links are displayed on the shell landing page in User mode. Use links to provide users with access to useful websites, your company's website, an intranet, or other destinations.
Select **Add** and enter the name and URL for the links you want to add to the landing page.
9. Select the **Calendar** tab, and select one of the following options:
 - **Standard Calendar:** This option lets you use a standard calendar for your shell. You can select the Company Calendar (Default) or other listed calendars.
 - **Custom Calendar:** This option lets you use a custom calendar for your shell. You can use Copy to select a calendar or create a custom calendar.
10. If applicable, select the **Gateway Integration** tab, and enter the **Project ID** of the Source Project.
11. When you are ready to save information and exit the window, select **Save**.

In this field	Do this
Administrator	Select an administrator for the shell.

In this field	Do this
Location	The Location picker lets you change the location of a shell and is accessible when you set up a shell or modify the shell details. See Location Picker Behavior. Use the Location Picker to select where the shell instance will reside. In the Location picker: • Find searches the current level • Open shows the next level of shells • Select completes the action • Location Picker will allow breadcrumbs to display through the hierarchy • Work systematically from the top of the hierarchy to the bottom • There must be an instance of a single shell to connect to You can use the Location picker to reorganize the shell hierarchy. The shell can move across tabs, or laterally along the hierarchy. When you move a shell instance, all the shell data moves with the shell. If an auto-populated business process moves with the shell instance, the auto-populated data moves with the business process. Data for the business process will be collected from the new shell location. In addition, if a child shell has been designed with linked elements, field values on the Shell Attribute Form or single-record BPs will be automatically updated to reflect changes when the shell is moved.

In this field	Do this
Status	You can activate the shell immediately, or place it On-hold and activate it later. A shell that is On-hold or Inactive cannot be used. It is good practice to leave a shell On-hold until you have completed the setup. Shell Administrators/Users with "modify shell status" rights are the only ones who can change the status. Status definitions for shells are: • Active: The default status of the shell when the shell is created in the user interface: – manually – from a template – from a shell It defaults to the status specified by the user if the shell is created by an import from a shell or template in Unifier. Otherwise, it is set as Active. It is the status for any active, in-progress shell. All shell actions in User and Admin mode are available. It is also the default shell status if it is created using REST services when no value is provided in the request. • On-hold: On-hold shells appear on the shells log. Shell administration functionality is available to shell administrators for setup and maintenance for users with permissions to perform that function. Users cannot create records in a shell that is On-Hold. If a user attempts to access a shell that is On-Hold, the system displays an alert message stating that the shell is On-Hold. • View-Only: For end users, View-Only shells can be viewed, printed, exported, and included in reports. They cannot be modified. When a shell is View-Only, the status overrides (but does not modify) access control permissions, granting only View permissions. The shell reverts to the access control permissions when the shell is made Active. View-Only shells can roll up to UDRs and dashboards. Business process records cannot be auto-created in View-Only shells. Data rolls up to dashboards on a View-Only shell from child shells in the hierarchy and rolls up to a parent shell from a View-Only shell. No updates can occur to View-Only projects through Integration, Mobile, or through reverse auto-population. View-Only shells cannot be updated through templates. Consolidate line item functionality is disabled for View-Only shells. Users can navigate through the shell hierarchy using View-Only shell instances. View-Only shells have only view, export, and print permissions available. Tasks and Drafts are not available for View-Only shells. Messages are available, but users cannot add comments. Mailbox is available for viewing, but users cannot send, edit or delete messages for View-Only shells. When a shell becomes View-only, all scheduled jobs associated with it are canceled. When the status of the shell changes back to Active, you must restart any scheduled jobs. Administrators can perform all actions on View-Only shells. • Inactive: Used to suspend shell usage. Inactive shells are visible from Admin mode under

In this field	Do this
	Sponsored Shell log only, but <i>not</i> visible under the Shells node (that is, only Sponsor Company can access the shell), or in User Mode logs and selections. Only System and Shell Administrators (users with Modify Status rights) can reactivate the shell. Note "Late" tasks in an inactive shell may still show up in users' tasks logs. Though they can access the task, no transactions can be performed in the inactive shell.
Currency Name	Select the currency you want to use for the cost functions in this project. If the currency you select is other than the company Base Currency, complete the following fields.
Rate	Enter an exchange rate to use for conversion calculations. From the drop-down list select one of the following: - If Float is selected, the rate is updated automatically from the Co. Currency tab (this tab is located in the Exchange Rates sub-node of the Standards & Libraries node). - A Peg rate is locked at the company rate on the day the rate is set. (Only a Project Administrator can manually modify the Peg rate to a value other than the company peg rate.).
Enable Hedge	If you select this checkbox, the Hedge rate is used for conversion calculations. Otherwise, the Float rate will be used.
Rate	(Optional) If an amount is entered for the Rate, the hedge rate is used until the amount specified is reached (by spends) and then the system will revert back to the normal rate.
Amount	(Optional) If Float is specified, the system will retrieve the rate, based on today's date and time. If Peg Rate is specified, the field will be editable.
Comments	(Optional) Add any comments that might be necessary to explain the default currency.

Location Picker Behavior

The Location Picker opens when you click **Select for Location**.

You can use this Location picker to select a shell instance. The multiple instance shells are listed under the single shell instances, which are represented as tabs. You can select a tab on which the shell is listed on the organization configuration.

When this picker is first opened, it displays the instance of single shell. You can select an instance by highlighting it and clicking **Select**. You can expand or hide the single shell instances, and you can use the toolbar to filter or search for a shell instance.

Create a Shell by Copying a Template or Shell

You can create shells using the shell templates you created. You can also create shells by copying from existing shells. The **Copy From Shell Template** and **Copy From Shell** pages list all templates and shells, respectively, that are designated as **Active**, **On-hold**, or **View-Only**. You can verify the shell properties, make changes as necessary, update status, or activate as necessary. The status of shells created using this method is set to **Active** by default.

Note

As Shell Administrator, you can receive email notification of the successful creation of a shell. This notification can be set up in email notifications in uDesigner. Also, you can set your User Preferences to control whether you receive these notifications.

Creating a shell from a shell template or another shell, copies shell dashboards in the source template or shell to the destination shell. You can choose to copy any existing Custom Calendars from the template or from an existing shell. The system also copies the restrictions defined on the **Record Properties** tab of the **Business Process Setup** window from the selected shell or shell template to the new shell. For example, if the **Record Properties** tab is used to prevent users from downloading attachments, this restriction carries forward.

Users or groups, or both, copied from a selected shell or shell template are captured in the Users Audit Log and Group Audit Log respectively.

To create a shell from a shell template or existing shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable type from the list of functional nodes.
3. From the **Create** menu, select **From Template** or **From Shell**.
4. In the **Copy from Shell Template** or **Copy from Shell** window, select the applicable template or shell.
You can use the Search and Find on Page options to look for a specific shell or template in the list.
5. In the **Select Modules** pane, select the modules to include in the new shell. Users and Groups are selected by default and copied along with the shell properties.
For more information about the modules available for selection in the type of shell you are cloning, see [Shell Cloning Window Selections](#).

Note

When you copy a shell or template, you also copy existing setups in the modules you selected. If you select BP Setup when you copy a template, you will copy any existing business process setups, including those for any single-record business processes (SRBPs). SRBP setups and record data are copied along with everything else.

6. After you are done select the modules to include, select **Done**.
7. In the **Details** window, update the applicable tabs and fields. Most properties are copied from the original template or shell with the following exceptions:
 - **Number:** On the General tab, enter a Number for the shell template. If automatic numbering is specified, this field is read-only.
 - **Currency:** On the Currency tab, specify the Shell Currency.
 - **Image:** On the Options tab, specify the Shell Image (optional).
8. When you finish completing the shell details, select **Save**.
9. When the confirmation message appears, select **Yes** to create the shell.

Managing Member Companies

If your company has set up Partner Companies, those companies can become eligible to be added to shells. When added to a shell, these companies become Member Companies, and their users can participate in shells with any permission level you set for them.

Note

The list of eligible Partner Companies is maintained on the Partner Companies page. To view the list of Partner Companies, go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **User Administration**, and then select **Partner Companies**.

Adding a Member Company to a Shell

Active Partner Companies and their associated users (users with a unique user name and status of Active or On Hold) can be added to shells and assigned permissions, just like Sponsor Company users.

To add a Member Company to a shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Member Companies**.
4. If no Member Companies have been assigned to the shell, select **Add** below the **Add your first member company** line; otherwise, select **Add** +.
5. From the list of **Partner Companies**, locate and select the applicable companies, and then select **Add**.

The company is added to the list of Member Companies.

Viewing a Member Company Profile

To view a Member Company profile:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Member Companies**.
4. From the list of **Member Companies**, locate and select a company.
The view-only pane on the right displays basic profile information for the selected company. This information is maintained by the Partner Company's administrator.

Removing a Member Company from a Shell

You can remove a Member Company from the shell's Member Companies list. When a Member Company is removed from a shell, users belonging to the Member Company will be automatically inactivated for that shell.

To remove a member company:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Member Companies**.
4. From the list of **Member Companies**, locate and select a company.
5. Select **Remove**.
6. When the **Confirmation** message appears, select **Remove**.
The system removes the selected company from the list and deactivates any users who have been added to the shell.

Managing Shell Users and Groups

The User Administration grouping node (Admin mode) lets you manage the following:

- **Partner Companies**
- **Company Users**
- **Partner Users**
- **Groups**
- **Task Reassignment**
 - **Active User Tasks**
 - **Inactive User Tasks**
- **Integration Users**
- **Access Control**

This section discusses adding groups and users to shells, managing shell groups, audit log, and managing shell permission levels.

For more information about integration users, refer to the *Unifier Integration Interface Guide*.

Add a User to a Shell

After you have created a shell, you will need to add users to the list of approved shell users. Shell users can be from your own sponsor company, or from approved member companies.

When adding users from your company to the shell:

- To add users from your own (Sponsor) company, the user must be either **Active** or **On-Hold** at the company level. When added, the user will automatically be **Active** for the shell.
- Users who are inactive at the company level cannot be added to a shell.

When adding users from a Partner Company to the shell:

- To add a user from a Partner Company, the company must first be added to the Member Companies list for the shell. The user must be either **Active** or **On-Hold** at the company level. When added, the user will automatically be **Active** for the shell.
- The user does not need to be listed in the Partner Users log at the company level to be added to a company. If the user is listed in the Partner Users log, the user must be **Active** or **On-Hold**. If the user is not already in the Partner Users log, they will be automatically added to the list of Partner Users with a status of **Active**.

To add users to a shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **User Administration**, and then select **Users**. The Users log opens. The log lists all users that are already part of the shell.
4. Select **New**. The **User/Group Picker** opens.

Note

If a User Attributes form has been imported, the shell user log will reflect the design of any designed Partner Log included in that form. For more information, see Importing the User Attributes Form.

5. Select the **List Names from** drop-down list at the top of the picker window and choose the company from which to add the new shell user.
This list includes your sponsor company plus any member companies that have been added to the shell. You can select the Member Companies node under the shell to view the list of available member companies.

Note

By default, new users will have a status of **Active**. You can change the status or other user detail information selecting the user from the list and selecting **Open**.

6. Select one or more users to add to the shell. You can press the **Shift** or **Ctrl** keys to select multiple users at once.
7. Select the **Add** button. You can continue to select and add names to the **Selected Users** portion of the picker window.
8. Select **OK** to add the users to the shell. The new users are listed in the Users log.

To add a user to a shell template:

1. Open the shell template.
2. In the left Navigator, select **User Administration**, and then select **Users**.
3. Follow the steps above to add a sponsor company or member company user to the template.

View or Edit a Shell User's Profile

You can edit a shell user's details. These procedures apply to sponsor company users and member company users.

To view or edit a shell user profile:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **User Administration**, and then select **Users**. The Users log opens.
4. Select a user from the list, and select **Open**. The Edit Shell User window opens. The window has the following tabs: General, Groups, Permissions and Custom.

Note

If a User Administration design has been imported by your Administrator, the content of this profile can vary.

5. In the **General** tab, review the contact information for the user as it will appear in the Shell Directory. By default, the shell address (as defined in the shell details) displays as the contact address. You can edit this information as necessary.
You can also modify the user's shell status:
 - **Active:** User is listed in Shell Directory, in User/Group Picker, User can log in and participate in the shell. New users are Active by default.
 - **Inactive:** If you deactivate a shell user, the user's name will not appear anywhere for selection on any shell-related functions. The user will not be able to access the shell. Inactivating a user at the shell level does not affect their status on other shells.
 - **On-Hold:** User can be added to a shell, or assigned as a participant in a business process workflow but cannot log in.
6. Select the **Show user on the Shell Directory** option, if you want the user's information to be viewable in the Shell Directory.
7. In the **Groups** tab, you can add or remove the shell users to a shell-level group the same way that you add company users to company groups. Select **Add** to add a group to the user's list, or select a group and select **Remove** to remove the user from the group.

8. In the **Permissions** tab, you can assign shell-related permissions to the user, by module and mode.
9. In the **Custom** tab, you can view available custom attributes that may have been added to the user form.

Create and Manage Shell Groups

Groups are a way to aggregate users together so that adding new team members to the shell and assigning permissions can be done quickly and efficiently. For example, groups can be members of the same shell team, or they can be users who share the same access privileges, or both. At the company level, groups can span shells. At the shell level, all members of a group are members of a given shell. Different members of a shell may have different access to functionality, depending on their role on the shell.

For example, a Finance person might require access to cost modules and reports dealing with finances, but not RFIs or Transmittals and their associated reports. An Executive might require access to Summary financial information and not the cost BPs.

As users are added to a Group, they will inherit the Group's permissions. If they are in more than one group, the highest level of permissions granted in any group for a module will prevail.

When adding users to the group, you can choose eligible users from the sponsor company and any partner company users. The company short name will be listed in the User Picker window next to each user.

Company level groups cannot be copied into a shell.

To create a group:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the **[shell type]**, and open the **[shell instance]**.
3. In the left Navigator, select **User Administration**, and then select **Groups**. The Groups log opens.
4. Select **New**. The Groups window opens.
5. Complete the **General** tab:
 - Group Name: Enter a name for the group
 - Manager: Click Select and select a user from the User Picker window. This is the person who will be responsible for administering the group.
 - Description: Enter an optional description for the group.
6. Select the **Members** tab. This is where you add and manage group membership.
 - a. Select **Add**.
 - b. From the User/Group Picker, select the users to add to the group, and select **Add**.
 - c. Select **Ok**.
7. Select the **Permissions** tab. In this tab, you manage group permission settings. If a user is a member of the group, the user will inherit all group permissions. Granting permissions to the group is similar to granting permissions to individual users. Choose the shell-related permissions for the group that will apply to all members assigned to this group. Choose permissions by module and mode.

8. In the **Custom** tab, you can view available custom attributes that may have been added to the group form.

To edit group information:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **User Administration**, and then select **Groups**. The Groups log opens.
4. Select a group, and select **Open**. The Groups window opens.
5. Make changes as necessary, and select **OK**.

Groups and Audit Log

The **Audit Log** provides the following information about any action that has been taken on the **Groups**:

- **Date**
- **Event**
- **Action**
- **Field**
- **Old Value**
- **New Value**
- **User Name**
- **Proxy User**
- **Attachment**

To access the **Audit Log** for the **Groups** functional node:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Groups**.
3. In the **Groups** log, select a group (select a record).
4. From the toolbar, select **View**, and then select **Audit Log** to open the **Audit Log**.

The **Audit Log** captures all the actions that have taken place on that selected record.

When you (the Admin) add a user to a group by using a *user data picker*, the user's name will be seen in the **Audit Log**. The **Action** column of the **Audit Log** will include the nature of the action (Member Added), indicating that a user was added by way of the **<data picker label>** *user data picker*. The **Old Value** column will remain empty (null), and the **New Value** column will include the name of the user that was added, followed by a colon (:), followed by the name of the company that the user belongs to **<firstname lastname:Company Name>**.

Grant Shell User Permissions through Shell Access Control

After you have created a shell, assign permissions to the people who need to access the shell. You can use Access Control to grant multiple Users or Groups permission simultaneously, rather than editing the properties for each User or Group individually.

To view or change a shell's access control:

Do either of the following:

- Got to the project/shell tab, switch to **Admin** mode, and select **Access Control** in the left Navigator.
- Go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **Company Sponsored Shells**, open the **[shell type]**, open the **[shell instance]**, and then select **Access Control** in the left Navigator.

The system displays a copy of the Navigator menu in the right pane of the window. In this right pane, you may select different modules of the Navigator menu to set permissions for those functions.

Generate and Print Access Information Report

You can generate and print an Access Information summary of user and group access (permission settings). The report will display all user and group permissions.

To generate the Access Information report:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, open the **[shell type]**, and open the **[shell instance]**.
3. In the left Navigator, select **Access Control**.
4. Select **Access Information**. The Access Information window opens. It may take several moments to generate the report.

To print the Access Information report:

1. Generate the **Access Information** report.
When the report is complete, **Print**  becomes available.
2. Select **Print**.

Create Shells Using an Imported CSV File

An Integration interface must be created for shell creation to work via CSV file.

You can create shells by importing a shell template as a CSV file. The status of shells created using this method defaults to the value provided by the user in the import file. Otherwise, it is set as **Active**.

To create shells using an imported CSV file:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select a shell type.
3. From the toolbar, select **Actions**, select **Export Template**, and then select **Shell Creation Template**.
4. Complete the shell creation template CSV file. Some hints:
 - The shell location must have a leading /. Be sure to use the true shell name as entered in the Shell Manager configuration.
 - Shell statuses are Active—which includes On-hold and View-Only—or Inactive. Use initial capitalization.

- Administrators must be valid users. You might enter the user's full name (for example, Henry James) or the system user name (for example, *hjames*) depending on the configuration.
- If using currency override, be sure the currency is active in Exchange rates and the CSV file contains a valid currency code.

Note

You cannot modify the BP Data Picker alone if it has an associated Line Item Data Picker value. You must provide both the BP Data Picker value and BP Line Item Data Picker value to modify any one of them.

5. From the toolbar, select **Actions**, select **Import**, and then select **From Template**.
6. Select the modules to include in the shell.
7. Select the template from the listed templates, and select **OK**.
8. Browse for the CSV file and open it.
9. Select **OK**.

Reasons for a Shell Creation business process CSV failing to import

- Any incorrect rows will cause the CSV upload to fail and an error message will display the incorrect row number.
- Incorrect shell location used (this has to be set up before importing a CSV).
- Invalid shell name or number.
- The location on the imported CSV file is not a valid parent location.
- The sub-shell of the type that you are importing was not configured under the parent location specified.
- Currency override used an invalid currency code or the currency was not active in Exchange rates.

Note

- If shell creation fails, the user who attempted to import the CSV will get an email notification of the import failure.
- When creating a shell through CSV, the Document Manager Attribute Form that is associated with the template, or shell instance, will be copied over to the newly created shell.

Create Shells with Shell Creation Business Process

Before you begin, review these conditions for successful shell creation from the Shell Creation business process (BP):

- Shell Creation BP must be designed and deployed in uDesigner and configured and set up in Unifier
- Shell template must be created

- Shell hierarchies must be correctly configured in Shell Manager
- Shell number must be unique
- Shell override currency, if it is to be used, must be active in Exchange Rates

The Shell Creation BP can synchronously auto-create a multiple-instance CBS or generic shell anywhere in or across a shell hierarchy. The BP uses a shell location picker to assign where the shell will reside in the hierarchy and a shell picker to select a template. This means shell organization must be correctly configured in the Shell Manager and the shell template must be created. Shells created using this method are set to **Active** by default if the shell status is not specified when the shell is created.

The Shell Creation BP designer can define the business process as company level or shell level. The designer may use workflow to support review and approval processes, or elect to design the BP without workflow. At run time, the system passes select information captured in the BP form to the newly created shell, thus avoiding redundant data entry. Reaching terminal status, as defined in uDesigner, triggers the synchronous shell creation process. If there is a planning item picker on the Shell Creation BP record or line item, the system will link the planning item to the new shell. If the Shell Creation BP includes a Shell Data Picker, the picker is populated and any auto-population and reverse-auto-population occurs. If the source contains a Line Item Data Picker and the Shell Attribute form of the destination contains the same Line Item Data Picker, the value is copied during creation; if the destination has any Query conditions that are not met, the value of the Line Item Data Picker is not copied.

Notification

The system will send an email notification upon successful shell auto-creation, provided notification is set up in business process setup, the system has a valid email address for anyone selected to receive notification, and those selected subscribe to email notification in user preferences. If auto-creation fails, the system will immediately send an alert to those selected to receive notification.

There are two types of Shell Creation BPs: simple and line item.

- **Simple-type**
The simple-type Shell Creation BP creates one shell per record. Reaching a terminal record status triggers the synchronous shell auto-creation process. The BP designer has the option to either define workflow or not. The designer can define integration; in Unifier, you can obtain the business process import template from the business process log.

It is important to note that the CSV import template must be correctly completed or the system will reject the CSV file in its entirety and not create any shells. When the system rejects a CSV file, it creates an error file that tells you which line item is in error and why it is in error. To ensure a successful upload of the Shell Creation BP CSV file, retain the column headings in the same order as exported, and complete all required fields.
- **Line Item-type**
The line item-type Shell Creation BP creates a shell for each line item. Use the upper form to create the parent shell and each line item to create a child shell. Auto-creation happens when:
 - Record terminal status is reached
 - Line item status is met
 - A line item passes validation

At run time, when the system processes a line item-type Shell Creation BP record, it will create a shell from each line item that passes validation. For example, if there are 10 line items in the shell creation record, but only five pass validation, the system will create five shells. Shell creation line items can be consolidated, provided consolidation is configured.

CSV Import or RESTful Services (Create Shell)

When you create a shell instance by using CSV import or RESTful Services (Create Shell), the system copies into the created shell:

- The **View Forms** tab information from the selected shell template.
- The forms added in the shell template, along with users and groups who are part of the viewers list.

Integration Tab

The **Integration** tab in shell template attribute window is used to map multiple P6 projects with the respective Unifier shell.

Note

The mapping is only used for the Activity Sheet.

The **Integration** tab in shell template attribute window has the following options:

- **Add**
- **Remove**
- **Apply**
- **OK**
- **Cancel**

The **Integration** tab in shell template attribute window has the following columns:

- **Project ID**
An alphanumeric field that can be populated using **Add**. The **Project ID** cannot be modified or removed from this tab.
- **Project Name**
- **Schedule Type**

While you create the mapping, you are required to enter only the Project ID (marked as a required field). Unifier populates the other columns (**Project Name** and **Schedule Type**) when you run project synchronization.

When you add projects, using this tab, to create an Activity Sheet:

- You cannot modify, or remove, a Project ID.
- If the **Link Multiple Projects** option is not disabled, the system uses synchronization in multiple P6 projects.

If the user decides to change the existing mapping setup (Activity Sheet), Unifier replaces the existing Activity Sheet with P6 projects after the next synchronization.

If a user tries to remove (**Remove**) a project that is mapped to an Activity Sheet, Unifier cannot process the change because the schedule for the project is present in the Activity Sheet.

You can integrate multiple P6 projects into one Unifier project.

- When you integrate (Project ID mapping) a P6 project into a Unifier project through the **General** tab of the Shell Attribute Form, Unifier updates the **Schedule Type** field in **General** tab. The **General** tab is mostly used for one-to-one integration (one P6 project mapped to one Unifier project).
- When you integrate (Project ID mapping) multiple P6 projects into one Unifier project through the Integration tab of the Shell Attribute Form, Unifier does not update the **Schedule Type** field in the **General** tab. In the **Integration** tab, the **Schedule Type** column is updated. The **Integration** tab is mostly used for many-to-one integration (many P6 projects mapped to one Unifier project).

CBS Type Shell for a Non-EVM User

Updating a CBS type shell

In a CBS type shell, when a non-EVM user opens the shell details (available through the **Details** option in the **My Dashboard** list), the user can select the **Integration** tab to add only one P6-related project (select the plus sign symbol: **Add Project ID**). If there is an Activity Sheet available and the user decides to add a schedule for the project, Unifier will display a message that the existing schedule in the Activity Sheet will be replaced with the added schedule for the project. If the user selects **Yes**, the new schedule will be included in the Integration tab and the Add External Project ID option becomes disabled.

Use the *gear menu* () to delete the added, or existing, schedule for the project.

After a non-EVM user adds a new schedule for the project and selects Save, the shell dashboard page opens and displays the new schedule project information in the **Details** block. This enables the non-EVM user to proceed with data synchronization.

To synchronize data:

1. In the left Navigator, select **EVM**, and then select **Activity Sheet**. The **Activity Sheets** log opens.
2. Select **Get Data**. The **Get Data** window opens.
3. Click inside the **Project** field, and add the schedule for the project.
4. From the **Activity Sheets** log (on the right panel), select the **History** tab, and select **Refresh**.
5. From the **Activity Sheets** log (on the left panel), select the activity sheet to open it.

The **Activity Sheet** log lists all the activities for the added schedule for the project.

Similar to an EVM user, a non-EVM user can use the following tabs of the **Activity Sheet** log (on the right panel) to see more information:

- **General**
- **Assignments**
- **Audit Log**

The non-EVM user can select the **Assignments** tab, select the *gear menu* of resource, and perform the following:

- **View Assignment Spread**
- **Assign CBS**
- **Assign Rate Source**

The non-EVM user can select an activity (in the **Activity Sheet** log), and select the following options:

- **View Activity Spread**
- **Assign CBS**

The non-EVM user cannot add a column to the **WBS Sheet** (**WBS Sheet** sub-node, from the left Navigator). The same limitation (inability to add column) applies to the **Cost Sheet** (in the left Navigator, select **Cost Manager**, and then select **Cost Sheet**).

Creating a CBS type shell

When creating a new CBS type shell (go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Company Sponsored Shells**, and then select **Projects**), a non-EVM user can use the **Integration** tab to add a single source project ID (select **Add**).

CBS Type Shell for an EVM User

The shell Integration tab enables you to link to a single or multiple Oracle Primavera Cloud projects.

- Users with access to the EVM feature can add multiple Oracle Primavera Cloud projects to be linked to a Unifier project.
- Users without access to the EVM feature will be able to link to a single Oracle Primavera Cloud project using the Integration tab.

You can add the Oracle Primavera Cloud Project ID using the **Add** option in the Integration tab. All validations (regarding valid project ID, duplicate Project ID, and so on) will take place when you add a Project ID in the Integration tab. The Project Name and Schedule Type columns will be read-only, and the values will be populated after the Oracle Primavera Cloud project is synchronized with the Unifier project.

The Project Name value will populate with the name of the Oracle Primavera Cloud project, and the Schedule Type will be populated with the default value: Duration. The following other fields (in shell details) are populated if the shell is synchronized with the Oracle Primavera Cloud project, using the Project Number from the Shell Attribute Form:

Field	Description
Shell Status	Populated with a valid status value. It can be: Active. Note The Shell Status will be populated or updated only when the shell instance is created by using a new out-of-the-box (OOTB) synchronization from Gateway (Send Activity data from Primavera Cloud to Unifier). When a user gets activity data using the Get Data option in the Activity Sheets log, the value of the Shell Status will not be updated.
Project Start Date	The start date of the project, received from the Oracle Primavera Cloud project. This data element in the Shell Attribute Form will get updated only when a project is created from the Gateway.
Integrated with	This data element in the Shell Attribute Form will be populated as: Primavera Cloud.

Note

For projects that are integrated with Oracle Primavera Cloud using the shell Integration tab, the Shell Status and the Project Start Date will not be updated.

Project Mappings in Gateway

Oracle Primavera Cloud	Gateway	Unifier
projectName	Name	ProjectName
dataDate	DataDate	Data_date
projectCode	Id	ProjectNumber
Start Date	DataDate	uuu_project_start_date
status	Status	uuu_shell_status

The plus (+) option will be disabled after you add the Oracle Primavera Cloud Project ID, and the data from Oracle Primavera Cloud project will be synchronized with the Unifier project in case the user does not have an EVM license.

A user with an EVM license will be able to add multiple Oracle Primavera Cloud Project IDs, and the data from multiple Oracle Primavera Cloud projects can be synchronized with the Unifier project. Furthermore, the **Schedule Type** field will be shown as 'Duration' for all the Oracle Primavera Cloud projects in the **Integration** tab of shell details. In the shell details **General** tab, the field **Integrated with** is populated as: Oracle Primavera Cloud.

Configuring CBS Shell Types with Oracle Integration for P6 System Activity Sheets

Company Administrators and Shell Administrators can configure Oracle Integration as the default integration engine for specific projects in single shells of CBS shell type. This ensures all system actions and integrations consistently follow the selected engine, supporting Oracle's transition to Oracle Integration and removing ambiguity from integration paths.

Benefits

- **Clear Engine Selection:** Administrators can explicitly select the integration engine for each project, preventing misconfiguration and ensuring systems route integration requests to the correct platform.
- **Simplified Management:** Configuration and migration steps are visible and straightforward, reducing ambiguity over which integration path is active.
- **Confirmation on Migration:** Built-in confirmation dialog boxes to switch engines help avoid accidental data or configuration loss.
- **Consistent Schema:** No changes to field names or data types when switching engines means existing reports and workflows.
- **Enhanced Auditing:** Each integration run is recorded with engine details, status, and user activity, supporting efficient troubleshooting and compliance tracking.
- **Unambiguous routing** ensures all system activity for the project uses only the chosen integration engine.
- No disruption to existing reports or mobile applications.

Limitations

- Only one engine can be selected per project. Fallback is not supported.
- If Oracle Integration prerequisites are not met, action is blocked until resolved.
- Prior Primavera Gateway configuration is deleted when switching to Oracle Integration.

Prerequisites

- Oracle Integration is enabled at the company level as the integration engine as outlined in the Initial Oracle Integration Setup.
- You have the required permissions to set up P6 schedule integrations as an administrator.
- Existing Primavera Gateway integrations are removed upon switching to Oracle Integration. Be aware of business and technical impacts.

Procedure

To set up Oracle Integration as the default integration engine of choice in single shells of CBS shell type for P6 System Activity Sheets:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, go to the targeted shell node.
For example, select the Vision Corporation tab.
3. In the **<Shell_Name>** log (right pane), select the applicable single shell and then select **Open** from the gear menu.
4. On the Shell's landing page, from the **My Dashboard** menu, select **Details**, and then select the **Integration** tab.

The **Integration** tab displays only those projects that are configured to use Oracle Integration as the default integration engine.

5. If you choose to migrate one or more projects that are already configured with Primavera Gateway integration, they will be migrated to use Oracle Integration by default when you select the **Integration** tab. A confirmation dialog box displays indicating that these projects will be migrated to Oracle Integration as the default integration engine.
 - Select **Yes** to migrate projects to use Oracle Integration. The projects listed in the **Gateway Integration** tab are relocated to the **Integration** tab.
 - Select **No** to retain the projects configured with Primavera Gateway integration.
6. To configure additional projects (in the same shell) in the **Integration** tab:
 - a. From the **Add** menu, select **P6 Schedule** from the following options:
 - **Primavera Cloud Cash Flow**
 - **Primavera Cloud Schedule**
 - **P6 Schedule**

Note

In the **Integration** tab, you can select only one source for schedule: **Primavera Cloud Schedule** or **P6 Schedule**.

- b. Enter the following project details:
 - i. **Project ID:** Enter the unique alphanumeric project ID available in this shell.
 - ii. **Project Name:** Displays the project name associated with the Project ID.
 - iii. **Primavera Cloud Workspace ID:** Displays the Workspace ID in Primavera Cloud only if you chose **Primavera Cloud Schedule** or **Primavera Cloud Cash Flow**. This field is not applicable if you chose **P6 Schedule** (step 6a).
 - iv. **Integration Type:** Displays the integration source you selected from the **Add** menu (step 6a).
 - c.
 7. Repeat the previous step to set up multiple projects with Oracle Integration for P6 System Activity Sheets.
 8. To confirm all the above changes, select **Save**.
 9. Ensure the required Oracle Integration mappings are set up for each Activity Sheet before attempting Get/Send calls.
 10. Validate changes by checking audit logs (engine, job ID/status, project name, schedule type, timestamp, actor are logged for each run).
 11. If required, proceed to configure shell templates with Oracle Integration engine enabled for P6 System Activity Sheets as outlined in [Configuring Oracle Integration for P6 System Activity Sheets in Shell Templates](#).

Alternative Method

You can also configure shells to use Oracle Integration as the default engine using the Update Shell REST endpoint.

Migrating Projects Set Up with Primavera Gateway Integration to Oracle Integration

Company Administrators and Shell Administrators can migrate projects configured with Primavera Gateway integration for P6 System Activity Sheets to use Oracle Integration as its default integration engine.

Benefits

- Clear Engine Selection: Administrators can explicitly select the integration engine for each project, preventing misconfiguration and ensuring systems route integration requests to the correct platform.
- Reduces operational friction.
- Ensures a supported integration path going forward.
- Simplified Management: Configuration and migration steps are visible and straightforward, reducing ambiguity over which integration path is active.
- Confirmation on Migration: Built-in confirmation dialogs to switch engines help avoid accidental data or configuration loss.
- Consistent Schema: No changes to field names or data types when switching engines means existing reports and workflows.
- Enhanced Auditing: Each integration run is recorded with engine details, status, and user activity, supporting efficient troubleshooting and compliance tracking.
- Enables the use of updated and Oracle Integration-only APIs.

Limitations

- Primavera Gateway configuration is removed. Rollback is not available without reconfiguration.
- Users must complete any required Oracle Integration mappings after migration, before Get/Send is enabled.

Prerequisites

- Oracle Integration is enabled at the company level as the integration engine as outlined Initial Oracle Integration Setup.
- You have the required permissions to set up and manage integrations.
- You have administration permissions for the project.
- One or more projects are configured with Primavera Gateway integration.
- The required mappings are in place for Get/Send calls to succeed with Oracle Integration.

Procedure

To migrate current projects configured with Primavera Gateway integration to use Oracle Integration as the default integration engine:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, go to the targeted single shell node.
For example, select Vision Corporation.
3. In the **<Shell_Name>** log (right pane), select the applicable single shell of CBS type and then select **Open** from the **gear** menu.

4. On the Shell's landing page, from the **My Dashboard** menu, select **Details**, and then select the **Integration** tab.

The **Integration** tab displays only those projects that are configured to use Oracle Integration as the default integration engine.
5. If you choose to migrate one or more projects that are already configured with Primavera Gateway integration, they will be migrated to use Oracle Integration by default when you select the **Integration** tab. A confirmation dialog displays indicating these projects will be migrated to use Oracle Integration as the default integration engine.
 - Select **Yes** to migrate projects to use Oracle Integration. The projects listed in the **Gateway Integration** tab are relocated to the **Integration** tab.
 - Select **No** to retain the projects configured with Primavera Gateway integration.
6. Complete Oracle Integration mappings as required.
7. To save the changes, select **Save**.
8. (Optional) At the shell template level, update templates to use Oracle Integration by default for all new projects as outlined in [Configuring Oracle Integration for P6 System Activity Sheets in Shell Templates](#).

Alternative Method

You can also configure shells to use Oracle Integration as the default engine using the Update ShellREST endpoint.

Managing Shells

You can verify the shell properties, make changes as necessary, update the status, or activate as necessary. Oracle recommends that you keep the information up to date to reflect the ongoing status and progress of the shell.

You can also modify shell information in a shell type template and then update one or more existing shells by "pushing" the information from the template to the shells (see [Updating Shells](#)).

To open a shell:

Select the tab for the shell. The shell landing page opens.

To edit an existing shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the **[shell type]**, and double-click the **[shell instance]** in the log. The corresponding dashboard opens.
3. In the upper-right corner, select **My Dashboard** () , and then select **Details** to open the shell **Details** window.
4. Modify the shell information as necessary.
Depending on your permissions, you can modify any of the shell properties any time during the shell duration, except for the shell currency. (After a shell is set up, the shell currency is locked.) For example, if you want to assign newly defined global views to the project/shell so that they are available to all users, go to the **System Information** section on the **General** tab, click **Select**  next to the **Shell Templates** field, select the applicable template, and click **Select**.

The Location picker lets you change the location of a shell and is accessible when you set up a shell or modify the shell details. See [Location Picker Behavior](#) for details.

Use the Location Picker to select where the shell instance will reside. In the Location picker:

- Find searches the current level
- Open shows the next level of shells
- Select completes the action
- Location Picker will display breadcrumbs through the hierarchy
- Work systematically from the top of the hierarchy to the bottom
- There must be an instance of a single shell to connect to

Note

You can use the Location picker to reorganize the shell hierarchy. The shell can move across tabs, or laterally along the hierarchy. When you move a shell instance, all the shell data moves with the shell. If an auto-populated business process moves with the shell instance, the auto-populated data moves with the business process. Data for the business process will be collected from the new shell location. In addition, if a child Shell Attribute Form or a single-record BP in a child shell has been designed with linked elements, the child shell attribute data and BP data will be automatically changed to reflect the new parent shell's current attribute values.

5. Select **Save** to save your changes and exit the **Details** window.

To deactivate an existing shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the shell instance, and open the applicable shell in the log.
The shell window opens.
3. In the upper-right corner, select **My Dashboard** (), and then select **Details** to open the shell **Details** window.
4. On the **General** tab, go to the **System Information** section, and set the **Status** field to **Inactive**.

Note

If you deactivate a single instance shell, you cannot access that shell again to activate it. The shell will persist, but not be accessible.

5. Select **Save** to save your changes and exit the **Details** window.

To copy the customized user attributes from the company-level directory:

You can copy (bulk) any customized user attributes from the company-level directory and paste them into the shell.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Company Sponsored Shells**, and then select **Projects** to open the **Projects** log.
3. From the toolbar, select **Actions**, select **Export**, select **Export Users**, and select one of the following options:
 - **All Shells**
 - **Selected Shells**
4. Follow the prompts.

After your selection, the system will download (bulk) an Excel sheet (CSV file) with all the existing users. To copy the company-level directory values under the **Copy Attributes** column for the shell, select **Yes**.

If you do not select **Yes**, no values will be copied from the company-level directory.

To complete the importing of the values:

1. From the toolbar, select **Actions**, select **Import**, and then select **Import Users**.
2. Use the file selection window to select the updated CSV file.
3. Proceed with importing the values by uploading the Excel sheet (CSV file). The system will update (bulk) the user attributes data elements and their values.

When you create a project/shell using the **Create** option and **Manual** suboption, you must either add users manually or through a CSV file. After creating the project/shell, you can import the information. If you add a user manually, the **Copy Attributes from Company Workspace** option (which is available in the **General** tab the **Users** or **Groups** sub-node of the **User Administration** node for the [shell]) lets you import the values in the **Copy Attributes** column of the CSV file.

If you copy user attributes values from a shell template, the shell template attributes for the Users are also copied over.

By default, the system adds the project administrator to any newly created, or copied, shell. In this scenario, the additional attributes will not be copied.

Managing Cash Flow in Shell Templates

As a company administrator or shell administrator, you can work with the following features:

- **Cash Flow**
- **Cost Sheet**
- **Schedule of Values (SOV)**
- **Funding Sheet**
- **Commitment Funding Sheet**

Cash Flow Curves

Cash flow curves are graphical presentations of the expenditures or spends. Cash flow curves enable you to:

- Pull data from cost sheets, business process records, or schedule sheets
- Record cash flow history by way of using snapshots

- Generate cash flow curve reports

The cash flow management steps (**Baseline**, **Actuals** or **Spends**, and **Forecast**) can be displayed as *Cash flow curves* in the system.

The following lists the cash flow curves types:

1. **Detail Curves:** Cost per period.
2. **Rollup Curves:** Each period includes sum of all previous periods.
3. **Summary Curves:** Each project/shell cash flow has a system defined project/shell summary curve.

Cash Flow Curves and Data Sources, Types, Distribution Profiles, Detail curve templates, and Roll up curve templates Options

A cash flow curve requires a data source which your administrator can create in the **Standards & Libraries** node.

Data Sources

Used to identify cash flow curves and Roll up data to the company worksheets. Multiple data sources can be defined per curve type, depending upon business needs. Example: "Original baseline and Current baseline" data sources can be defined for type "Baseline". For roll ups, curves are summarized across data sources.

Curve Types

Used with pre-defined categories of cash flow curves for:

- **Baseline**
- **Forecast**
- **Actual (or Spends)**
- **Portfolio Budget**
- **Derived**
- **Custom**

Each curve type has its own logic to address different business requirements.

Distribution Profiles

Used to distribute data automatically in the cash flow worksheet.

Detail curve templates

Cash flow curves can be created either manually or from a template.

Cash flow templates are created in Company Workspace from project templates and are used to create cash flow worksheets.

Roll up curve templates

Used to create curves that roll up cash flow data from projects/shells.

Cash Flow Curves Types

The following explains each of the cash flow curves types in detail.

Detail Curves

The Detail Curves are referred to a family of curves that can be defined at the project/shell level, or at the company level.

Each curve, within the family, is based on a data source (one curve per unique data source).

A cash flow curve of type *Detail Curves* is a curve that is used to monitor the movement of cash at different detail levels in a project/shell.

The cash flow (Detail Curves) levels in a project/shell are:

- **Project/Shell**
- **Commitment**
- **CBS**
- **Summary CBS**

Note

If you select **Summary CBS**, the system sets the **Summary CBS Level** to **1** by default. You can select another level, based on what is available in the Cost Sheet.

As mentioned earlier, you can specify the following cash flow types for each detail level in a project.

Note

The first three cash flow types in the list below are the *three most common, and important*, standard cash flow types.

Baseline

Depicts the project budget that is spread over the duration of the project. Users can define multiple baselines for a project.

Actuals (Spends)

Depicts the expenditures (spends) that have actually incurred.

Forecast

Depicts the projection of the future costs, based on current expenditures (Actuals or Spends).

Portfolio Budget

Depicts the Baseline curve, or Forecast curve, used for portfolio optimization scenarios in the Portfolio Manager.

Derived

Depicts the Baseline curve, or Forecast curve, used for portfolio optimization scenarios in the Portfolio Manager.

The **Derived** curve is used to convert the sources currencies to a currency used by the **Portfolio Budget** curve.

Custom

Depicts cost data other than **Baseline**, **Actuals**, and so on.

The **Custom** curves can include any other cost data that you want to view graphically.

Roll up Cashflow Curve (Rollup Curves)

A **Roll up Cashflow** curve includes a group of curves with **Active** status summarized by data source across all projects/shells in a company.

A **Roll up Cashflow** curve facilitates the aggregation of cash flow data source (from projects/shells and **CBS**) to the company cash flow worksheets.

Note

A **Roll up Cashflow** curve can only be created at company levels.

You can compare curves side-by-side, in the cash flow worksheet, to view cash flow distribution over time.

Summary Curves or Summary Cash Flow Curves

A summary cash flow curve is designed to present a consolidated view of cash flows, and each project/shell cash flow has a system-defined project/shell summary curve. A summary cash flow curve:

- Uses the detail cash flow curves to compare the movement of curves against the previous snapshots, and in the process show differences among curves with respect to time and schedule.
- Displays Variance and Forecast analyses, similar to the detail cash flow curves.

Creating a Project or Shell Cash Flow Curve Template

There are two types of cash flow templates:

- **Company level templates:** Created in the Company Workspace (**Admin** mode).
- **Project or shell level templates:** Created in a project/shell.

When creating curves from templates, only the properties of the curve are copied; data and permissions are not copied.

You can pre-set curve options, except, for example, the business process records and cost sheet columns, which are set at run time.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, open the applicable **[project]**, select **Cost Manager**, and then select **Cash Flow**.
3. From the toolbar, select **+Create**.
4. Enter information in the **General** tab of the **New Cash Flow Worksheet** window.

For more information, see [Project or Shell Cash Flow Properties \(General Pane\)](#).

Project or Shell Cash Flow Properties (General Pane)

The following explains the fields under the **General** block. The next topic explains the fields under the **General** block: **More Options**.

Note

The red asterisk by a field indicates that the field is required.

Under the **General** block, you can manage the following cash flow properties:

- **Name:** Enter a unique name for the curve in the Name field.
- **Description:** (Optional) Enter a brief description in the Description field.
- **Detail Level:** Select a detail level option from the Detail Level box. The selected option determines the level-of-data the cash flow curves will display. Choose one:
 - **Project/Shell:** Choose this to track cash flow for the entire project/shell. For example, Baseline and Actuals curves might chart the budget and cash outlay across the entire project. If applicable, select **Filter CBS Codes** or **Filter Summary CBS Codes**.
 - **Summary CBS:** Choose this option to track cash flow by summary CBS codes. To select this option, the cost sheet used in the project/shell must be a tree structure. If you select this option, the system sets the **Summary CBS Level** to **1** by default. You can select another level, based on what is available in the Cost Sheet.
 - **CBS:** Choose this to track cash flow within a project/shell at the CBS code level. This lets you track cash flow across the project for specific CBS codes, or for all CBS codes.
 - **Business Process (Commitments):** Choose this option to track cash flow associated with a particular commitment record and its line items. This includes, for example, a base contract and optionally their referenced Change Commits. Select a business process.
Items listed are the project/shell level business processes of type "Base Commit."
When creating a template, choose the one that is likely to be used in the projects/shells the template will be used in. When creating the curve in a project/shell from the template, you may need to verify that the business process chosen here is active in the project/shell or pick another from the list.
- **Manage Filters:** If you selected **Project/Shell**, **Summary CBS**, or **CBS**, you can refine the list of codes included. To do so, select **Manage Filters**. (The names of the subsequent pages and options changes based on whether you are filtering CBS codes or Summary CBS codes.) On the **Filter [Summary] CBS Code** page, select **Add [Summary] CBS Code**. On the **Cost Code Picker** page, select the applicable codes, and then select **Add & Add More** if you want to save your changes and add additional codes or select **Add & Close** to save your changes and return to the previous page. To save the selected cost codes, select **Done**.
- **Select Base Commit Record:** This is selectable in a project/shell, but not in a template. Click **Select**. Choose the commitment record from the list of available records in the project/shell. Each commitment record can be selected only once.
You can set up the automatic creation of a cash flow curve when a Base Commit record is created and completed or reaches a particular step. This is done in the BP Setup for the business process.

- **Select your reference element:** The worksheet will display the reference elements. By default, the **Record No.** will display as the **Number**. You can select the drop-down list and choose an element to display for the **Name** field (Contract No., Contract Terms, or Title).
- **Rollup cashflow data to company?**
 - **Yes:** The curve will roll up to company cash flow the next time the curves are refreshed.
 - **No:** The curve will not roll up to company cash flow the next time the curves are refreshed.
- **Time Scale:** If you edit the time scale, the period close settings will be reset, and you will need to enter new ones for the new time scale. The time scale determines the scale and format in which the data is shown on the cash flow worksheet.

By Month or Year: The default is Month.

Format: Choose the format that you want the month and year displayed on the graphs. The default is M YYYY.

To save your changes, select **Save & Close**. You can continue adding curves that will make up the detail curves. To discard your changes, or close the **Cash Flow Properties** window, select **Cancel**.

Project or Shell Cash Flow Properties (General Pane - More Options)

The following explains the fields under the **General** block: **More Options**.

Note

The red asterisk next to a field box indicates that the field is a required field. You will not be able to save your changes without entering a value in that field.

When you select **More Options**, the **More Options** window opens which contains the following tabs on the left pane. Each tab provides additional options for the cash flow which are described below.

Period Close Settings tab

This tab lets you set the option: **Enable auto snapshot**

The **Period Close Settings** tab lets you choose some automatic settings that will happen at the end of each period (month or year, as chosen in the Time Scale field).

When you select the **Enable auto snapshot** option, you determine when the system must take an automatic snapshot of the data.

If you selected Month for Time Scale:

You can choose a specific date each month to automatically take a snapshot, or you can specify a particular day (such as the first Monday of the month).

If you selected Year for Time Scale:

You can specify the exact date to take the snapshot each year (or a particular day such as the first Monday of January).

After an auto snapshot is taken, the curve will be refreshed immediately. Actuals (Spends) will resume after the auto snapshot is complete.

Examples of using the options: **Enable auto snapshot**, **Cutoff spends**, and **Resume Spends**

Company A wants to take an auto snapshot of its cash flow data every time period. Company A would choose a particular date (such as the 3rd of the month for Month, or January 3 for Year). The system would take the snapshot and refresh the cash flow curve. They do not select the Cut off spends option.

Company B regularly reviews and revises forecast projections during fixed days every time period. Because it does not want new Spends records to hit the cash flow worksheet during this period, they choose the **Cut off spends** option. This option requires that you select the Enable auto snapshot first. The company sets this option so that an auto snapshot is taken of their changes just before spends are resumed. Snapshots can then be used for comparison of previous forecasts with the current month. Any spends records that came in during the forecast period are not lost; the **Resume Spends** option determines whether those spends records will be included in the previous month's cash flow or pushed to the next time period.

Cutoff spends

This option is applicable for Actuals (Spends) type curves.

Selecting this option will temporarily stop spends business processes (for example, Invoices) from hitting the cash flow worksheet during analysis periods.

The **Enable auto snapshot** option must be selected first. Actuals (Spends) will resume after the auto snapshot is complete.

If no value is specified, the last date of the current month is presumed.

The system marks the time of the **Cutoff spends** date at the beginning of the day. For example, on June 30, the data can become locked at the beginning of the day and not at the end of the day, therefore, preventing the user from making any last minute changes before the start of the next month.

Apply Spends to

The selections under this period close settings option let you apply spends to an effective date or before/after a **Cutoff spends** date.

By default, **Cutoff spends** will resume immediately after an auto-snapshot is taken.

Note If there is a gap between the Cutoff spends date and the **Enable auto snapshot** date, any spends that came during that period are not lost.

For example, if a **Cutoff spends** date is October 26 and the Enable auto snapshot on date is November 2, (and the Time Scale is monthly) that defines the freeze period. Any spends that come in on October 27, 28, 29, 30, 31, and November 1 will not hit the cash flow sheet during the freeze period. After the Enable auto snapshot on date is reached, spends will be included back in October for spends (Oct 27-31) or November for spends (Nov 1-2), and the effective date will be retained.

The same month/year as the effective date

The text of the options under **Apply Spends to** change based on the selection that you made for the Time Scale (By: Month or By: Year).

If this option is chosen, spends data is included back in the current period after the freeze period is lifted. The final output is similar to the case where no period close settings are applied because the effective date is retained. Spends for Oct 26-31 will be included in October and Nov. 1-2 spends will be included for November.

For example, if the cutoff date is the 26th of October and the snapshot date is the 2nd of November, the freeze period is Oct 26 - Nov 2. Any spends that come in on Oct 27, 28, 29, 30, 31 and Nov 1 and 2 will not show on the cash flow sheet during the freeze period. After the auto snapshot date is reached, these spends will be included back in either Oct for spends (Oct 27-31) or Nov for spends (Nov 1-2) and the effective date will be retained.

The next month/year if after the cutoff date

After the freeze period is lifted, spends data from the cutoff date to the end of the month will be included in the next month/year. Spends for Oct 26-31 will be included in November and Nov 1-2 spends will be included for November.

The previous month/year if on or before the cutoff date

After the freeze period is lifted, spends data from the start of the month up to the cutoff date will be included in the previous month/year. Spends for Oct 26-31 will be included in September and Nov 1-2 spends will be included for November.

During the **Cutoff spends** period, even if automatic refresh of the curve occurs as set in the **Schedule** tab, spends data will not hit the cash flow sheet until spends are resumed again.

Summary tab

This tab lets you automatically add the selected curve to a selected summary curve. This tab contains a list of available summary curves to choose from.

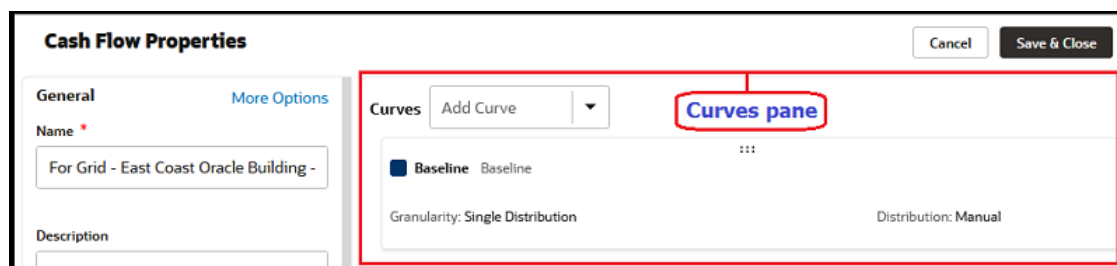
Decimal Options tab

This tab provides two options:

- **Decimal Options:** To specify the number of decimal places supported for amounts throughout the cash flow, select this option.
- **Use Currency Decimal Precision:** To ensure that the cash flow preserves the number of decimals used within areas such as Base Currency, Project Currency, and Transaction Currency, select this option.

Project or Shell Cash Flow Properties (Curves Pane)

As shown in the screen capture below, the **Cash Flow Properties** window **Curves** pane contains the **Curves** drop-down list, which lets you add or remove curves.



After you add a curve, the system adds an interactive image representation of the added curve to the **Curves** pane.

The following explains the elements of the **Curves** pane.

Curves

Select **Curves** to open a list that contains the list of available curves.

These curves, or data sources, have been defined by the Administrator in the **Standards & Libraries** module. (Go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Standards & Libraries**, then select **Cash Flow**, and then select **Data Sources**.)

The **Cashflow Datasources** window, where the Administrator edits the list of data sources, contains a list of data sources that are categorized by name, curve type and color. For example, the name of a data source can be **Actuals** which is assigned to a **Spends** curve type, or the name of a data source can be **Original Budget** which is assigned to a **Portfolio Budget** curve type.

Different names can be assigned to on curve type. That is to state, depending on the curve type, the curve setup options will differ. The admin can define one curve for every data source.

For more information, see [Project or Shell Cash Flow Properties Curves Pane and Curve Types](#).

Note

The **Portfolio Budget** curve is linked to scenarios in the **Portfolio Manager**. The Project Manager must create this curve. After it is created, the curve shows the initial budget projections.

The list of available curves include:

- **Baseline** curve
- **Actual** (Spends) curve
- **Forecast** curve
- **Derived** curve
- **Portfolio** Budget curve
- **Custom** curve

When you open a curve, you can view the data in the transaction currency, if the transaction currency is different than the project currency.

If a curve, or data source, is available within the **Curves** pane (interactive image representation of the added curve), double-click anywhere on the image to open the curve window. In this window, you can see the curve type information as well as information related to the curve, as described in the following table. If you make any changes, select **Update** to save your changes.

Curve Type	Description
Granularity	• Single distribution of sum of Base Commit and all changes • By individual record (base commit and all changes separately) • By line items within each individual record
Distribution Method	• Manual entry of values for each cash flow period • Manual dates and manual profile selection • Business process dates and default profile selection

Curve Type	Description
Select change orders you want to include	- List of Business Processes and corresponding statuses are presented. Manual entry of values for each cash flow period - Manual dates and manual profile selection - Business process dates and default profile selection - You have the option to add methods to the distribution method or remove methods from the distribution method.
Variance	Your options are Inflow or Outflow . See the following topics for details about Variance values.

To add a curve:

1. Select **Curves**.
2. Select a data source, or curve, from the list (for example, select **Forecast**) to open the data source window.
3. Enter values in the fields, and select **Add**, when finished.

Project or Shell Cash Flow Properties Curves Pane and Curve Types

This topic provides details about adding curves to the cash flow.

You can construct cash flow curves by:

- **Project/Shell**
- **Summary CBS** (Summary CBS Code) If you select this option, the system sets the **Summary CBS Level** to **1** by default. You can select another level, based on what is available in the Cost Sheet.
- **CBS** (CBS Code)
- **Commitment** (a specific commitment BP and record)

The following topics explain the process for adding the following curves to a cash flow worksheet, for comparison:

- **Baseline** curve
- **Forecast** curve

Note

The procedures that follow:

- Assume that you have created your data sources.
- Describe how to add a curve type to an *existing* cash flow (using the **Detail Level** column of the **Cash Flow** log for the project/shell) that does not have a curve.

Baseline Curve

Add a **Baseline** curve for cash flow template by:

- **Project/Shell**
- **Summary CBS or CBS**

Note

The following procedures assume that you have created your data sources.

Adding a Baseline Curve Template for Cash Flows

To add a Baseline curve for cash flow template:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet), select the *Project/Shell* option from the **Detail Level** drop-down list.
You have the option to filter by either *CBS Codes* or *Summary CBS Codes*.
5. In the **Curves** pane of the **Cash Flow Properties** window **Curves** pane, select *Baseline* from the **Curves** drop-down list.
6. In the **Baseline** window, complete the fields using the information in the tables below.
7. When finished, select **Save & Close** to save your work and open the cash flow worksheet that you have added.

Set up the following curve properties in the template:

Property	Description
Cost	Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select <i>one</i> of the following options: • Manual: Lets you manually enter amounts for each period. This option will be available if you have chosen Manual in the Distribution drop-down list. You can enter cost information in the Total field on the worksheet. • Distribute amount from Cost Sheet Column: Lets you use the default distribution profile. This option will be available if you have chosen Auto by default profile in the Distribution drop-down list. Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.

Property	Description
Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data. Note If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project/shell. Select <i>one</i> of the following options for each date: • Manual: Select this option to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option to select a schedule sheet (from the Select schedule sheet drop-down). You can populate the From and To dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the Select schedule sheet drop-down. If these dates are changed on the selected schedule sheet, the changes will be reflected on cash flow after the next refresh of the curves. • Use dates from Activity Sheet: Lets you select an activity sheet (from the Select Activity Sheet window). After you select using dates from an activity sheet, you must determine the values for the Project Type, From Date, and To Date fields.
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select <i>one</i> of the following options for how to distribute the data automatically between cash flow time periods: • Manual: Lets you enter values into each field manually. • Company Level: Lets you select a pre-determined method for distribution. Your options are: – Linear – S curve – Front Loaded – Back Loaded • Project Level: Lets you select from a list of available project levels. The distribution profiles are defined in the: • Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. or • Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection. When you build a Baseline curve for individual line items, the Schedule of Value (SOV) type influences the distribution options. • If the SOV lists individual line items by CBS, you can distribute cost for each line item individually. • If the SOV groups line items, you cannot distribute cost for each line item individually.

Adding a Template for Baseline Curve for Cash Flow by Project or Shell

To add a template for a Baseline curve for cash flow by project/shell:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet), select the *Project/Shell* option from the **Detail Level** drop-down list.

You can opt to filter for CBS Codes, or filter Summary CBS Codes.

5. In the **Curves** pane of the **Cash Flow Properties** window, select *Baseline* from the **Curves** drop-down list.

6. In the **Baseline** window, complete the fields using the information in the tables below.
7. When finished, select **Save & Close** to save your work and open the cash flow worksheet template that you have added.

Set up the following curve properties:

Property	Description
Cost	 Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select <i>one</i> of the following options: • Manual: Select this option to set up manual entry for amounts each period. This option is available if you have chosen Manual in the Distribution drop-down list. Users can enter cost information in the Total field on the worksheet. • Distribute amount from Cost Sheet Column: Select this option to set up a default distribution profile. This option is available if you have chosen Auto profile in the Distribution drop-down list. Examples of column: <i>Approved Budget Revisions, Approved Commitment Changes, Approved Contracts</i>, and so forth.

Property	Description
Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data.  Note If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project/shell. Select <i>one</i> of the following options for each date: • Manual: Select this option to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option to select a schedule sheet (from the Select schedule sheet drop-down). You can populate the From and To dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the Select schedule sheet drop-down. If these dates are changed on the selected schedule sheet, the changes will be reflected on cash flow after the next refresh of the curves. • Use dates from Activity Sheet: Lets you select an activity sheet (from the Select Activity Sheet window). After you select using dates from an activity sheet, you must determine the values for the Project Type, From Date, and To Date fields.
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select <i>one</i> of the following options for how to distribute the data automatically between cash flow time periods: • Manual: Select this option to set up manual field entries. • Company Level: Select this option to set up a pre-determined method for distribution. Your options are: Linear, S curve, Front Loaded, Back Loaded. • Project Level: Select this option to set up a list of available project levels. The distribution profiles are defined in the: • Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. or • Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection. When you build a Baseline curve for individual line items, the Schedule of Value (SOV) type influences the distribution options. • If the SOV lists individual line items by CBS, you can distribute cost for each line item individually. • If the SOV groups line items, you cannot distribute cost for each line item individually.
Variance	For Project/Shell, typically, the Variance is set to Inflow for a Baseline type curve. Your choices are: • Inflow • Outflow The value will be used to calculate variances against the Outflow type curves.

Adding a Template for Baseline Curve for Cash Flow by Summary CBS or CBS

To add a template for Baseline curve for cash flow by Summary CBS or CBS:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window (or the **Cash Flow Properties** worksheet), select any of the following options from the **Detail Level** drop-down list:

- *Summary CBS* (for summary CBS codes)
 - *CBS* (for cash flow by individual CBS codes)
5. In the **Curves** pane of **Cash Flow Properties** window, select *Baseline* from the **Curves** drop-down list.
 6. In the **Baseline** window, complete the fields using the information in the tables below.

You can cost-load a schedule sheet by assigning roles and resources to project-related activities. When you associate a CBS code with an activity in the schedule sheet, the system can distribute its cost over a period of time based on activity dates and the calendar. You will be able to view this distributed cost along with other cash flow curves related to the project.

You can create another Baseline curve by selecting a cost sheet as the source for cost or create a Forecast, Spends, and Custom curve. In all these cases, the list of CBS codes will be from the cost sheet and will not be filtered by the schedule sheet.

The cash flow will pull distribution data (Linear, S-Curve, On Start and Finish) from a schedule sheet.
 7. When finished,, select **Save & Close** to save your work and open the cash flow worksheet that you have added.

Cash Flow Properties Template Setup For a Baseline Curve by Summary CBS

When you select the **Summary CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Property	Description
Cost	Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select your cost source as <i>one</i> of the following options: • Manual: Select this option if you want to manually enter amounts for each period. You can enter cost information in the Total field on the worksheet. This option is available if you select <i>Manual</i> in the Distribution drop-down list. • Distribute amount from Cost Sheet Column: Select this option if you want to use the default distribution profile. This option is available if you select <i>Auto</i> in the Distribution drop-down list. For example, columns such as <i>Approved Budget Revisions</i>, <i>Approved Commitment Changes</i>, <i>Approved Contracts</i>.

Property	Description
Schedule	Define the range of dates to use for plotting the cash flow data. These are the dates you specify to start the curve and end the curve. Note If you choose to take dates from the schedule sheet elements, the Master schedule sheet is used for the project/shell. Select <i>one</i> of the following options: • Manual: Select this option if you want to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option if you want to select dates from a schedule sheet. Select a specific sheet from the Select schedule sheet list, and proceed to enter dates in the From Date and To Date fields to plot the cash flow curve from the selected schedule sheet. For example, <i>Actual Start Date</i> and <i>Actual Finish Date</i>. Selecting Use dates from Schedule Sheet option allows you to access the individual Schedule Sheet. The CBS (or Summary CBS) code shows the dates of the actual CBS (or Summary CBS) related activities. • Use dates from Activity Sheet: Select this option if you want to select dates from an activity sheet. Select a sheet from the Select Activity Sheet window, and proceed to specify the Project Type, From Date, To Date, and Periods for Cost Distribution to plot the cash flow curve from the selected activity sheet.
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. Select a distribution profile to use as the default distribution profile for the curve. Select any of the following options: • Manual: Select this option if you want to enter values in each field manually. • Auto: Select this option if you want to specify a default distribution profile for initial display and calculations in the cash flow worksheet. If you change the distribution profile from the worksheet, the default profile is also updated to reflect the current selection. To specify a default distribution profile: 1. Select the CBS Profile Distribution button. 2. In the Distribute by default profile CBS window: a. Select a predetermined distribution method (at the Company Level or Project Level) from the Set Profile drop-down list. The distribution profiles for this field are defined in the following locations: – Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. - or – Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. b. Select one or more WBS codes from the list, and select Update.
Variance	For CBS, typically, the Variance is set to Inflow for a Baseline type curve. This value is used to calculate variances against the Outflow type curves. Your choices are: • <i>Inflow</i> • <i>Outflow</i>

Cash Flow Properties Template Setup For a Baseline Curve by CBS

When you select the **CBS** option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add **Baseline** curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Property	Description
Bring Baseline Data From Distribution	Specify the source of your baseline data. Select any of the following options: • General: Select this option if you want to bring data from a general CBS code. • Schedule Sheet: Select this option if you want to choose a schedule sheet and view the cost distribution information by CBS. To use data from schedule sheet, click the select icon to open and select a schedule sheet in the Select Schedule Sheet window. • P6 Summary Sheet: Select this option if you want to use cost and dates information from P6 Summary Sheet (spread), based on the P6 Data Sources. Proceed to specify the Data Type. The P6 Data Sources are listed in the Cashflow Data Sources window. (To access this window, go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select Standards & Libraries, select Cash Flow, and then select Data Sources.) • Activity Sheet: Select this option if you want to use cost and dates information from an activity sheet. Proceed to specify the Sheet Name, Project Type, Cost and Schedule & Distribution.
Data Type	This field displays if you chose to Bring Baseline Data From a <i>P6 Summary Sheet</i>. Select any of the following values: • At Completion: Select this option if you want to draw the Baseline curve using the At Completion Cost spread. • Planned: Select this option if you want to draw the Baseline curve using the Planned Cost spread.
Sheet Name	If you set Bring Baseline Data From Distribution to Activity Sheet , select an activity sheet.
Schedule & Distribution	If you set Bring Baseline Data From Distribution to Activity Sheet , select a column for the Schedule & Distribution method.

Property	Description
Cost	 Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select your cost source as <i>one</i> of the following options: • Manual: Select this cost option if you want to manually enter amounts for each period. This option will be available if you selected the Distribution as <i>Manual</i>. This allows you enter cost information in the Total field on the worksheet. • From Activity Sheet Column: This cost option displays if you chose to Bring Baseline Data From an <i>Activity Sheet</i>. Select a column from the Activity Sheet such as <i>At Completion Cost</i>, <i>Planned Cost</i>, or <i>Remaining Cost</i>, and so forth. • From Cost Sheet Column: Select this cost option if you chose to Bring Baseline Data From an <i>Activity Sheet</i> and want to use a default distribution profile. This option is available if you selected the Distribution field value as <i>Auto</i>. From the drop-down list, select a column name such as <i>Approved Budget Revisions</i>, <i>Approved Commitment Changes</i>, <i>Approved Contracts</i>, and so forth.

Property	Description
Schedule	Define the range of dates to use for plotting the cash flow data. These are the dates you specify to start the curve and end the curve. Note If you choose to take dates from the schedule sheet elements, the Master schedule sheet is used for the project/shell. Select <i>one</i> of the following options: • Manual: Select this option if you want to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option if you want to select dates from a schedule sheet. Select a specific sheet from the Select schedule sheet list, and proceed to enter dates in the From Date and To Date fields to plot the cash flow curve from the selected schedule sheet. For example, <i>Actual Start Date</i> and <i>Actual Finish Date</i>. Selecting Use dates from Schedule Sheet option allows you to access the individual Schedule Sheet. The CBS (or Summary CBS) code shows the dates of the actual CBS (or Summary CBS) related activities. • Use dates from Activity Sheet: Select this option if you want to select dates from an activity sheet. Select a sheet from the Select Activity Sheet window, and proceed to specify the Project Type, From Date, To Date, and Periods for Cost Distribution to plot the cash flow curve from the selected activity sheet.
Project Type	If you set Schedule to Use Dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use Dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule as Use dates from Schedule Sheet or Use Dates from Activity Sheet , then select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select any of the following options: • Manual: Select this option if you want to enter values into each field manually. • Auto: Select this option if you want to specify a default distribution profile for initial display and calculations in the cash flow worksheet. If you change the distribution profile from the worksheet, the default profile is also updated to reflect the current selection. To specify a default distribution profile: 1. Select the CBS Profile Distribution button. 2. In the Distribute by default profile CBS window: a. Select a predetermined method for distribution (at the Company Level or Project Level) from the Set Profile drop-down list. The distribution profiles for this field are defined in the following locations: – Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. - or – Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. b. Select one or more WBS codes from the list, and select Update. The Auto option is selected by default, if you selected the Schedule option as <i>Use Dates from Activity</i>. Additionally, if you also selected the Periods for Cost Distribution option as <i>Honor working days</i>, Auto displays as a read-only field, and you can no longer select a default distribution profile.

Property	Description
Periods for Cost Distribution	This field displays only if you have selected the Schedule option as <i>Use Dates from Activity Sheet</i>, and Distribution as <i>Auto</i>. Select any of the following options to specify how to distribute the costs based on the activity schedule: • Consecutive Periods: Select this option to distribute costs based on the profile from the earliest start to the latest finish dates across activities for each CBS or Summary CBS code. This is the default option for new or existing curves if you selected Schedule as <i>Use Dates from Activity Sheet</i>. • Exclude Gap Periods: Select this option to distribute costs by honoring gaps between activities if there are multiple activities for the same CBS Code. • Honor Working Days: Select this option to distribute costs based on the working days of activities.
Variance	For CBS, typically, the Variance is set to Inflow for a Baseline type curve. This value is used to calculate variances against the Outflow type curves. Your choices are: • <i>Inflow</i> • <i>Outflow</i>

Forecast Curve

As a part of cash flow management, forecasting is about calculating the future expenditures, based on the project schedules.

You can add a **Forecast** curve for cash flow by:

- **Project/Shell**
- **Summary CBS or CBS Commitment**

Note

The following procedures assume that you have created your data sources.

Adding a Template for Forecast Curve for Cash Flow by Project or Shell

To set up an Actuals (or "spends") curve for cash flow by project/shell:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**, the starting point for all cash flow operations.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window or **New Cash Flow worksheet**, select *Project/Shell* from the **Detail Level** drop-down list.

5. In the **Curves** pane of the **Cash Flow Properties** window, select *Forecast* from the **Curves** drop-down list.
6. In the **Forecast** window, complete the fields using the information in the table below.
7. When finished, select **Save & Close** to save the forecast curve template.

Set up the following parameters:

Property	Description
Cost	Note The distribution method that you select determines the Cost options that are available. Select <i>one</i> of the following options: • Manual: Select this option to setup manual entry of amounts for each period. This option is available if you have chosen Manual in the Distribution drop-down list. Users can then enter cost information in the Total field on the worksheet. • Distribute amount from Cost Sheet Column: Select this option to setup a default distribution profile. This option is available if you have chosen Auto in the Distribution drop-down list. Examples of column: Approved Budget Revisions, Approved Commitment Changes, Approved Contracts, and so forth.
Schedule	This parameter enables you to plot the cash flow data. You can select <i>one</i> of the following options: • Manual • Use dates from Schedule Sheet Lets you select a schedule sheet (from the Select schedule sheet drop-down). You can populate the From and To dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the Select schedule sheet drop-down. If these dates are changed on the selected schedule sheet, the changes will be reflected on cash flow after the next refresh of the curves. After you select Use dates from Schedule Sheet, you must determine the values for the From Date and To Date fields. • Use dates from Activity Sheet Enables you to select an activity sheet (from the Select Activity Sheet window). After you select Use dates from Activity Sheet, you must determine the values for the Project Type, From Date, and To Date fields.
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .

Property	Description
From Date	If you set Schedule to Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select <i>one</i> of the following options for how to distribute the data automatically between cash flow time periods: • Manual: Select this option to set up manual field entries. • Company Level: Select this option to set up a pre-determined method for distribution. Your options are: Linear, S curve, Front Loaded, Back Loaded. • Project Level: Select this option to set up a list of available project levels. The distribution profiles are defined in the: • Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. or • Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. The default profile is used for the initial display and calculations in the cash flow worksheet. You can change the distribution profile from the worksheet. If you do this, the default profile will automatically update to reflect the current selection. When you build a Baseline curve for individual line items, the Schedule of Value (SOV) type influences the distribution options. • If the SOV lists individual line items by CBS, you can distribute cost for each line item individually. • If the SOV groups line items, you cannot distribute cost for each line item individually.
Variance	Your choices are: • Inflow • Outflow For CBS, typically, the Variance is set to Outflow for an Actuals (Spends) type curve. The value will be used to calculate variances against the Inflow type curves.

Property	Description
Begin calculations at end of curve	Select this option if you want to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period. Select Begin calculations at end of curve, select the drop-down list below, and select your desired option (for example, you can select Actuals (or "spends") curve, if this curve exists in the list).
Replace current period forecast with Actuals on cut off date	If you select this option and the period close settings have not been specified, the system replaces the Forecast curve with the Actuals (or "spends") curve at the end of the month. Note The cumulative graph will not show the Forecast connected to Actuals (or "spends") until the system overwrites the Forecast with the Actuals.
Allow edit of current period forecast until replacement actuals	This option lets you reconfigure the Forecast until the date set to replace the Forecasted values with Actuals (or "spends"). Note If the cutoff date is not specified, but the Replace current period forecast with Actuals on cut off date and Allow edit of current period forecast until replacement by Actuals options are selected, the system does not allow edits to the Forecast curve after the end of the month.

Property	Description
Distribute unassigned amounts from Spends	Your options for unassigned amounts are: • Using weighted average over all remaining periods • Using weighted average over ___ next periods You can enter the number of time periods (1 or more) not exceeding the number of periods remaining. The options above are available only if you have chosen to: • Select a distribution profile to use as the default distribution profile for the curve. • Select Begin calculations at end of curve option to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period. If you use auto distribution for a Forecast Curve with Spends enabled and you want to use the same approach for rows that are manually overridden, select the Allow distribution of unassigned amount for manual override rows checkbox.
Select Baseline curve for comparison	Select the drop-down list and select a Baseline curve to compare with the Forecast curve.

Adding a Template for Forecast Curve or Cash Flow by CBS Summary or CBS

To add a Forecast curve for cash flow by Summary CBS or CBS template:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**, the starting point for all cash flow operations.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window or **New Cash Flow worksheet**, select any of the following options from the **Detail Level** drop-down list:
 - *Summary CBS* (for summary CBS codes)
 - *CBS* (for cash flow by individual CBS codes)
5. In the **Curves** pane of the **Cash Flow Properties** window, select *Forecast* from the **Curves** drop-down list.
6. In the **Forecast** window, complete the fields using the information in the tables below.

Cash Flow Properties Template Setup For a Forecast Curve by Summary CBS

When you select the *Summary CBS* option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add *Forecast* curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Property	Description
Cost	 Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select your cost source as <i>one</i> of the following options: • Manual: Select this option if you want to manually enter amounts for each period. You can enter cost information in the Total field on the worksheet. This option is available if you select <i>Manual</i> in the Distribution drop-down list. • Distribute amount from Cost Sheet Column: Select this option if you want to use a default distribution profile. This option is available if you select <i>Auto</i> in the Distribution drop-down list. For example, columns such as <i>Approved Budget Revisions</i>, <i>Approved Commitment Changes</i>, <i>Approved Contracts</i>.
Schedule	 Note If you choose to take dates from the schedule sheet elements, the Master schedule sheet is used for the project/shell. Select <i>one</i> of the following options for each date: • Manual: Select this option if you want to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option if you want to select dates from a schedule sheet. Select a specific sheet from the Select schedule sheet drop-down list, and proceed to enter dates in the From Date and To Date fields to plot the cash flow curve. For example, <i>Actual Start Date</i> and <i>Actual Finish Date</i>. If these dates are changed on the selected schedule sheet, the changes are reflected on cash flow after the next refresh of the curves. • Use dates from Activity Sheet: Select this option if you want to select dates from an activity sheet. Select a specific sheet from the Select Activity Sheet window, and proceed to specify the Project Type, From Date, To Date, and Periods for Cost Distribution to plot the cash flow curve from the selected activity sheet.

Property	Description
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use dates from Activity Sheet, select the start date to use for plotting the cash flow curve. If the date is changed on the selected sheet, the change is reflected on the cash flow when the curve is next refreshed.
To Date	If you set Schedule to Use dates from Activity Sheet, select the end date to use for plotting the cash flow curve. If the date is changed on the selected sheet, the change is reflected on the cash flow when the curve is next refreshed.
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. Select a distribution profile to use as the default distribution profile for the curve. Select any of the following options: • Manual: Select this option if you want to enter values in each field manually. • Auto: Select this option if you want to specify a default distribution profile for initial display and calculations in the cash flow worksheet. If you change the distribution profile from the worksheet, the default profile is also updated to reflect the current selection. To specify a default distribution profile: 1. Select CBS Profile Distribution button. 2. In the Distribute by default profile CBS window: a. Select a predetermined distribution method (at the Company Level or Project Level) from the Set Profile drop-down list. The distribution profiles for this field are defined in the following locations: – Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. - or – Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. b. Select one or more WBS codes from the list, and select Update.

Property	Description
Variance	For Summary CBS, typically, the Variance is set to Inflow for a Baseline type curve. This value is used to calculate variances against the Outflow type curves. Your choices are: • <i>Inflow</i> • <i>Outflow</i>
Begin calculations at end of curve	Select this option if you want to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period.
Replace current period forecast with Actuals on cut off date	If you select this option and the period close settings have not been specified, the Forecast curve is replaced with the Actuals (or "spends") curve at the end of the month. Note The cumulative graph will not show the Forecast connected to Actuals (or "spends") until the system overwrites the Forecast with the Actuals.
Allow edit of current period forecast until replacement actuals	Select this option if you want to reconfigure the Forecast until the date set to replace the Forecasted values with Actuals (or "spends"). Note If the cutoff date is not specified, but the Replace current period forecast with Actuals on cut off date and Allow edit of current period forecast until replacement by Actuals options are selected, the system does not allow edits to the Forecast curve after the end of the month.

Property	Description
Distribute unassigned amounts from Spends	Your options for unassigned amounts are: • <i>Using weighted average over all remaining periods</i> • <i>Using weighted average over ___ next periods</i> You can enter the number of time periods (1 or more) not exceeding the number of periods remaining. The options above are available only if you: • Selected a default distribution profile for the curve. • Selected the Begin calculations at end of curve option. • If you use auto distribution for a Forecast Curve with Spends enabled and you want to use the same approach for rows that are manually overridden, select the Allow distribution of unassigned amount for manual override rows checkbox.
Select Baseline curve for comparison	Select a Baseline curve from the drop-down list to compare with the Forecast curve.

Cash Flow Properties Template Setup For a Forecast Curve by CBS

When you select the *CBS* option in the **Detail Level** drop-down list (**General** pane) and in the **Curves** pane you add *Forecast* curve (from the **Curves** drop-down list), proceed to set up the following parameters:

Property	Description
Bring Forecast Data From	Specify the source of your baseline data. Select any of the following options: • General: Select this option if you want to bring data from a general CBS code. • Schedule Sheet: Select this option if you want to choose a schedule sheet and view the cost distribution information by CBS. To use data from schedule sheet, click the select icon to open and select a schedule sheet in the Select Schedule Sheet window. • P6 Summary Sheet: Select this option if you want to use cost and dates information from P6 Summary Sheet (spread), based on the P6 Data Sources. Proceed to specify the Data Type. The P6 Data Sources are listed in the Cashflow Data Sources window. (To access this window, go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select Standards & Libraries, select Cash Flow, and then select Data Sources.) The data picker lists all the P6 data sources. The P6 data sources are listed in the Cashflow Datasources window. (To access this window, go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select Standards & Libraries, select Cash Flow, and then select Data Sources.) • Activity Sheet: Select this option if you want to use cost and dates information from an activity sheet. Proceed to specify the Sheet Name, Project Type, Cost and Schedule & Distribution. – (Required) Select your cost source from the Cost drop down list. Your options are: * From Activity Sheet Column * From Cost Sheet Column – (Required) Select the schedule and distribution method from the Schedule & Distribution drop-down list.
Data Type	This field displays if you chose to Bring Baseline Data From a <i>P6 Summary Sheet</i>. Select any of the following values: • <i>At Completion:</i> Select this option if you want to draw the Baseline curve using the At Completion Cost spread. • <i>Planned:</i> Select this option if you want to draw the Baseline curve using the Planned Cost spread.
Sheet Name	If you set Bring Baseline Data From to Activity Sheet , select an activity sheet.
Project Type	If you set Bring Baseline Data From to Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .

Property	Description
Cost	You can choose the cost column when creating a curve in a project/shell but not in templates. Select <i>one</i> of the following options: • Manual: Select this cost option if you want to manually enter amounts for each period. This option will be available if you selected the Distribution as <i>Manual</i>. This allows you enter cost information in the Total field on the worksheet. • From Activity Sheet Column: This cost option displays if you chose to Bring Baseline Data From an <i>Activity Sheet</i>. Select a column from the Activity Sheet such as <i>At Completion Cost</i>, <i>Planned Cost</i>, or <i>Remaining Cost</i>, and so forth. • From Cost Sheet Column: This cost option displays if you chose to Bring Baseline Data From an <i>Activity Sheet</i>. and want to use a default distribution profile. This option is available if you selected the Distribution field value as <i>Auto</i>. From the drop-down list, select a column name such as <i>Approved Budget Revisions</i>, <i>Approved Commitment Changes</i>, <i>Approved Contracts</i>, and so forth.
Schedule & Distribution	If you set Bring Baseline Data From to Activity Sheet , select a column for the Schedule & Distribution method.
Schedule	Define the range of dates to use for plotting the cash flow data. These are the dates you specify to start the curve and end the curve. If you choose to take dates from the schedule sheet elements, the Master schedule sheet is used for the project/shell. Select <i>one</i> of the following options for each date: • Manual: Select this option if you want to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option if you want to select dates from a schedule sheet. Select a specific sheet from the Select schedule sheet drop-down list, and proceed to enter dates in the From Date and To Date fields to plot the cash flow curve. For example, <i>Actual Start Date</i> and <i>Actual Finish Date</i>. If these dates are changed on the selected schedule sheet, the changes are reflected on cash flow after the next refresh of the curves. • Use dates from Activity Sheet: Select this option if you want to select dates from an activity sheet. Select a specific sheet from the Select Activity Sheet window, and proceed to specify the Project Type, From Date, To Date, and Periods for Cost Distribution to plot the cash flow curve from the selected activity sheet.
From Date	If you set Schedule to Use dates from Schedule Sheet or Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Schedule Sheet or Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. • Manual: Select this option if you want to enter values into each field manually. • Auto: Select this option if you want to specify a default distribution profile for initial display and calculations in the cash flow worksheet. If you change the distribution profile from the worksheet, the default profile is also updated to reflect the current selection. To specify a default distribution profile: 1. Select the CBS Profile Distribution button. 2. In the Distribute by default profile CBS window: a. Select a predetermined method for distribution (at the Company Level or Project Level) from the Set Profile drop-down list. The distribution profiles for this field are defined in the following locations: – Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. or – Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. b. Select one or more WBS codes from the list, and select Update. The Auto option is selected by default, if you selected the Schedule option as <i>Use Dates from Activity</i>. Additionally, if you also selected the Periods for Cost Distribution option as <i>Honor working days</i>, Auto displays as a read-only field, and you can no longer select a default distribution profile.

Property	Description
Periods for Cost Distribution	This field displays only if you have selected the Schedule option as <i>Use Dates from Activity Sheet</i>, and Distribution as <i>Auto</i>. Select any of the following options to specify how to distribute the costs based on the activity schedule: • Consecutive Periods: Select this option to distribute costs based on the profile from the earliest start to the latest finish dates across activities for each CBS or Summary CBS code. This is the default option for new or existing curves if you selected Schedule as <i>Use Dates from Activity Sheet</i>. • Exclude Gap Periods: Select this option to distribute costs by honoring gaps between activities if there are multiple activities for the same CBS Code. • Honor Working Days: Select this option to distribute costs based on the working days of activities.
Variance	For CBS, typically, the Variance is set to Inflow for an Actuals (Spends) type curve. This value is used to calculate variances against the Inflow type curves. Your choices are: • <i>Inflow</i> • <i>Outflow</i>
Begin calculations at end of curve	Select this option if you want to automatically start the Forecast at the end of a selected Actual (or "spends") curve for each time period.
Replace current period forecast with Actuals on cut off date	If you select this option and the period close settings have not been specified, the Forecast curve is replaced with the Actuals (or "spends") curve at the end of the month. The cumulative graph will not show the Forecast connected to Actuals (or "spends") until the system overwrites the Forecast with the Actuals.
Allow edit of current period forecast until replacement actuals	Select this option if you want to reconfigure the Forecast until the date set to replace the Forecasted values with Actuals (or "spends"). If the cutoff date is not specified, but the Replace current period forecast with Actuals on cut off date and Allow edit of current period forecast until replacement by Actuals options are selected, the system does not allow edits to the Forecast curve after the end of the month.

Property	Description
Distribute unassigned amounts from Spends	Your options for unassigned amounts are: • <i>Using weighted average over all remaining periods</i> • <i>Using weighted average over ___ next periods</i> You can enter the number of time periods (1 or more) not exceeding the number of periods remaining. The above options are available only if you have selected: • A default distribution profile for the curve • The Begin calculations at end of curve option • If you use auto distribution for a Forecast Curve with Spends enabled and you want to use the same approach for rows that are manually overridden, select the Allow distribution of unassigned amount for manual override rows checkbox.
Select Baseline curve for comparison	Select a Baseline curve from the drop-down list to compare with the Forecast curve.

Custom Curve

You set up a **Custom** curve template to allow your users to create and compare curves in a Cash Flow worksheet, but you do not want to associate them with data sources of the other curve types (Baseline, Forecast, Actuals (or "spends"), or Portfolio).

The following topics explain how to add a **Custom** curve for cash flow by **Summary CBS** or **CBS**.

Custom curves are not available for cash flow by **Business Process (Commitments)**.

The **Custom** curve setup is essentially the same as setting up **Baseline** curves.

Adding a Template for a Custom Curve for Cash Flow by Project or Shell

To add a custom curve for cash flow by Summary CBS or CBS template:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**, the starting point for all cash flow operations.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window or **New Cash Flow worksheet**, select *Custom* from the **Detail Level** drop-down list.
5. In the **Curves** pane of the **Cash Flow Properties** window, select *Custom* from the **Curves** drop-down list.
6. In the **Custom** window, complete the fields using the information in the table below.
7. When finished, select **Save & Close** to save the custom curve template.

Property	Description
Cost	 Note You can choose the cost column when creating a curve in a project/shell but not in templates. Select <i>one</i> of the following options: • Manual: Select this amount to set up manual entries of amounts for each period. This option is available if you have chosen Manual in the Distribution drop-down list. You can enter cost information in the Total field on the worksheet. • Distribute amount from Cost Sheet Column: Select this option set up the use of a default distribution profile. This option is available if you have chosen Auto in the Distribution drop-down list. Examples of column: <i>Approved Budget Revisions, Approved Commitment Changes, Approved Contracts</i>, and so forth.
Schedule	Lets you define the range of dates (what dates to start the curve and end the curve) to use to plot the cash flow data.  Note If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project/shell. Select <i>one</i> of the following options for each date: • Manual: Lets you manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Lets you select a schedule sheet (from the Select schedule sheet drop-down). You can populate the From and To dates according to the schedules available (Example: Actual Start Date and Actual Finish Date) pertinent to the schedule sheet that you have selected for the Select schedule sheet drop-down. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow after the next refresh of the curves. • Use dates from Activity Sheet: Lets you select an activity sheet (from the Select Activity Sheet window). After you select using dates from an activity sheet, you must determine the values for the Project Type, From Date, and To Date fields.

Property	Description
Distribution	Distribution profiles are used to distribute data automatically in the cash flow worksheet. This option lets you select a distribution profile to use as the default distribution profile for the curve. Select <i>one</i> of the following options for how to distribute the data automatically between cash flow time periods: • Manual: Select this option to enter values in each field manually. • Company Level: Select a pre-determined method for distribution. Your options are: Linear, S curve, Front Loaded, Back Loaded. • Project Level: Select from a list of available project levels.
Variance	Select Inflow or Outflow or leave the field empty.

Adding a Template for a Custom Curve for Cash Flow by CBS Summary or CBS

To add a custom curve for cash flow by Summary CBS or CBS template:

1. Go to your shell template, and switch to **Admin** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**, the starting point for all cash flow operations.
3. From the toolbar, select **+ Create**.
4. In the **General** pane of the **Cash Flow Properties** window or **New Cash Flow worksheet**, select any of the following options from the **Detail Level** drop-down list:
 - *Summary CBS* (for summary CBS codes)
 - *CBS* (for cash flow by individual CBS codes)
5. In the **Curves** pane of the **Cash Flow Properties** window, select *Custom* from the **Curves** drop-down list.
6. In the **Custom** window, complete the fields using the information in the table below.
7. When finished, select **Save & Close** to save the custom curve.

Property	Description
Cost	Select your cost source as <i>one</i> of the following options: • Manual: Select this option if you want to manually enter amounts for each period. You can enter cost information in the Total field on the worksheet. This option is available if you select <i>Manual</i> in the Distribution drop-down list. • Distribute amount from Cost Sheet Column: Select this option if you want to use the default distribution profile. This option is available if you select <i>Auto</i> in the Distribution drop-down list. For example, columns such as <i>Approved Budget Revisions</i>, <i>Approved Commitment Changes</i>, <i>Approved Contracts</i>.

Property	Description
Schedule	Define the range of dates to use for plotting the cash flow data. These are the dates you specify to start the curve and end the curve. Note If you choose to take dates from the schedule sheet elements, the system uses the Master schedule sheet for the project/shell. Select <i>one</i> of the following options: • Manual: Select this option if you want to manually enter the date in the cash flow worksheet. • Use dates from Schedule Sheet: Select this option if you want to select dates from a schedule sheet. Select a specific sheet from the Select schedule sheet list, and proceed to enter dates in the From Date and To Date fields to plot the cash flow curve from the selected schedule sheet. For example, <i>Actual Start Date</i> and <i>Actual Finish Date</i>. If these dates are changed on the selected schedule sheet, then the changes will be reflected on cash flow when the curves are next refreshed. • Use dates from Activity Sheet: Select this option if you want to select dates from an activity sheet. Select a sheet from the Select Activity Sheet window, and proceed to specify the Project Type, From Date, To Date, and Periods for Cost Distribution to plot the cash flow curve from the selected activity sheet.
Project Type	If you set Schedule to Use dates from Activity Sheet , select the project as either <i>Baseline</i> or <i>Current</i> .
From Date	If you set Schedule to Use dates from Activity Sheet , select the start date to use for plotting the cash flow curve.
To Date	If you set Schedule to Use dates from Activity Sheet , select the end date to use for plotting the cash flow curve.

Property	Description
Distribution	• Manual: Select this option if you want to enter values in each field manually. • Auto: Select this option if you want to specify a default distribution profile for initial display and calculations in the cash flow worksheet. If you change the distribution profile from the worksheet, the default profile is also updated to reflect the current selection. To specify a default distribution profile: 1. Select CBS Profile Distribution. 2. In the Distribute by default profile CBS window: a. Select a predetermined distribution method (at the Company Level or Project Level) from the Set Profile drop-down list. The distribution profiles for this field are defined in the following locations: – Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Standards & Libraries, select Cash Flow, and then select Distribution Profiles. - or – Go to the shell tab, and switch to User mode. In the left Navigator, select Cost Manager, and then select Cash Flow. From the toolbar, select Actions, and then select Manage Distribution Profiles. b. Select one or more WBS codes from the list, and select Update.
Periods for Cost Distribution	This field displays only if you have selected the Schedule option as <i>Use Dates from Activity Sheet</i>, and Distribution as <i>Auto</i>. Select any of the following options to specify how to distribute the costs based on the activity schedule: • Consecutive Periods: Select this option to distribute costs based on the profile from the earliest start to the latest finish dates across activities for each CBS or Summary CBS code. This is the default option for new or existing curves if you selected Schedule as <i>Use Dates from Activity Sheet</i>. • Exclude Gap Periods: Select this option to distribute costs by honoring gaps between activities if there are multiple activities for the same CBS Code. • Honor Working Days: Select this option to distribute costs based on the working days of activities.
Variance	Select Inflow or Outflow or leave the field empty.

Defining Global Cash Flow Views for Inclusion in Templates

You can define multiple global views for the Detail Level of type CBS, Project/Shell, Summary CBS, and Commitment in a Cash Flow template and push them to all or specific projects/shells so that they are listed in the View menu. This improves the ability of users on the same project and different projects to view Cash Flow information in a similar way even for different Cash Flow configurations. You can also define one of the views for each cash flow curve type as the default.

By default, views display as graphs. However, you can change a view to display as a grid or to present a split view that shows both a graph and a grid on the same page. Additionally, you can hide the Key Performance Indicator (KPI) section. (Even if you hide the KPI section as part of the template, users can select Expand KPI



to display it.)

You can update these views at any time and push them to all or specific projects/shells as the need arises. While these global views cannot be changed by the users, they can use them as the basis for creating their own views.

To define a Cash Flow View for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
5. In the **Cash Flow** log, select and open the applicable template.
6. From the **View** menu, select **Create New View**.
7. In the **Save View As** field of the **New View** window, enter a name for the new view.
8. From the Default Layout list, select **Grid View** or **Split View (Graph and Grid)** if you do not want to use the default Graph View.
9. To hide the KPI Panel from the view, select the **Hide KPI Panel** checkbox.
10. To select the applicable curves for the view, use the **Curves**, **Inflow**, and **Outflow** tabs.
11. To use data elements (DEs) to refine the view, use the **Filters** tab.
 - a. Select **Add Filter**.
 - b. Choose a **Data Element**: This list includes all Cost Code Segments and CBS Attributes. It also includes specific fixed-column items such as From Date, To Date, Total, and Unassigned.
 - c. Choose a **Condition**: This list displays a list of conditions that is based on the selected DE.
 - d. Choose a **Value**: Depending on the type of DE, choose a value that the query condition must meet.

You can add multiple filters to a view, and you can use the same DE multiple times. When adding multiple filters, you can use the **AND** and **OR** operators to specify that the view must match all listed filters or that it can match one or more of the listed filters. To add additional filters, select **Add Filter** again, repeat the preceding steps, and select the applicable operator that should apply. You can add up to 15 filters.

12. To save your changes, select **Save**.

Setting Default Cash Flow Views for Templates

After you have defined templates, you can specify one of the templates for each Detail Level of type CBS, Project/Shell, Summary CBS, and Commitment as the default for managing views.

To specify a default template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
5. In the **Cash Flow** log, select the applicable template, select the *gear menu* () , and select **Set as Default Template to Manage Views**.
Depending on the type, the **Default** column displays the applicable statement, **Yes for CBS Detail Level**, **Yes for Project Detail Level**, **Yes for Summary CBS Detail Level**, or **Yes for Commitment Detail Level**.

If another template was currently set as the default, the system removes the label from the **Default** column for that template.

To remove a default label:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
5. In the **Cash Flow** log, select the applicable template, select the *gear menu* () , and select **Reset Default**.

Managing Cash Flow Views for Templates

All shared views in a template that are set to Visible are displayed to those who have the applicable permissions when they access a cash flow curve that uses the template. If you update, hide (clear the Visible checkbox), or delete a view, these changes are automatically applied to the corresponding cash flow curves.

To update a Cash Flow View for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
5. In the **Cash Flow** log, select and open the applicable template.
6. From the **View** menu, select **Manage Views**.
7. Use the **Manage Views** dialog box to:
 - Change the order of the views in the **View** menu for the projects/shells.
 - Make a view visible or hide it.

- Delete a view.

The current Active View is marked with a green check mark.

8. To save your changes, select **Save**.

Packaging Single Instance Shells

You can package Single Instance Shells that exist in the **Development/Test** environment to transfer the Configuration Package to the **Production** environment.

Note

In Single Instance Shells, settings like Workflow Setup are treated as instance-specific rather than template-driven. These configurations are often adjusted directly within the destination environment to meet project-specific requirements (for example, assignee groups, CC users, completion policies). As a result, the system intentionally prevents these settings from being overridden by importing additional configuration packages. You can import the Workflow Setup for business processes (BPs), the Dashboard, and the Planning Manager from your source server to your destination server during the first import of the Single Instance Shell. For subsequent imports, any changes made on the source server are treated as **No Change** and will not be applied to the destination server. To reflect updates in Workflow Setup and other settings for Single Instance Shells, any changes must be manually applied in the destination environment after the initial import.

The Configuration Package that you create will include:

- The Shell details data (data from all tabs in the Shell).
- The currency defined in the Currency tab and if the selected currency does not exist in the destination environment, the system will create it.

Note

The Currency attributes such as Code, Name, Symbol, and so forth are not updated when you import the Configuration Package. After you create the shell, the Currency tab content will not be updated upon subsequent imports.

- The calendar from the Calendar tab and if the selected calendar does not exist in the destination environment, the system will create it.

The following Shell details are included in the Single Instance Shell:

Note

The following Shell details are exported and imported to the destination environment only on the first import. No subsequent updates of Shell details data can be performed in the destination environment.

- Shell data that exists in the form for the following fields: Shell Name, Shell Number, Administrator, and Shell Status.

The Shell log is a user-defined log, and the user-defined columns appear next to the system-defined columns.

When you create a Single Instance Shell Configuration Package successfully, the system stamps the Shell with the Last Packaged Date.

Shells cannot be created if they are not activated in the Configuration module, so the configuration of the Shell will be included in the Shell Configuration Package at the time of transfer between environments.

Note

The contents of the Organize tab, which defines the Shell hierarchy, will be included.

Updating Shells

The **Update Shells** function lets you quickly add or modify information in a shell. This will "push" the new information to the shells that you specify. By allowing data to be entered or modified once, this function helps to reduce set up time and ensure cross-shell uniformity.

The Update Shells function is available for select modules in shell type templates.

To access the templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.

Note

- When you copy a Setup from a Shell template, all the fields in the shell details block are copied.
- Because Schedule Manager was deprecated starting with version 23.5, it is omitted from a Shell template if you copy a setup.

The modules that you can update are listed below.

- **Users:** users, group membership, permissions
- **Groups:** group names, permissions
- **Business Processes and BP Setups:** Business processes, setups
- **User-defined Reports:** Reports, report permissions
- **Access Control:** modules, users, groups, permissions
- **Cost Sheet:** Cost sheet columns, column access, and restrictions
- **SOV:** General and Payment Applications structures
- **Commitment Funding:** Commitment funding sheet structure
- **Cash Flow:** Properties and permissions
- **Rules:** Cost or fund rules

- **Schedule Sheet Properties:** title, description, Master Schedule, status, auto-control, project start date, and error notification. [Updating Schedule Sheet Properties from Templates](#)
- **Gates:** Active or Inactive setups
- **Shell Instance Dashboards:** dashboards created at the shell level, and are available for users to view (but not edit) with granted permissions

Each of these modules has an Update function where you can use Find to isolate the shells you want to update. The find window contains data elements from the Find form (designed in uDesigner). This makes targeting shells with specific information possible. For example, if you add new users, to the company, and need to add them to many shells, but not every shell, you can add them to a shell template and use the Update Shells functional to add the users to only those shells that require them.

Shells with a status of Active or On-Hold can be updated with this functionality. Inactive or View-Only shells can only have their users or groups updated with this functionality. Users with create permission for the shell type template modules can do this operation.

Note

You update shell information one module at a time. Any Active or On-hold shells can be updated in this way.

When you create a configuration package for your shell templates, the system includes the following configurations from the selected component list:

- All shell templates that are included in the component list.
- Content of the shell template.
- Configuration of selected shells and business processes.

You can package the shell templates that exist in the **Development/Test** environment and transfer the configuration package to the **Production** environment, and your configuration package will include the shell details data (data from all tabs in the shell setup).

Currency

The currency, defined in the **Currency** tab, is included as a part of the configuration package. If the selected currency does not exist, the system creates one in the destination environment. The currency attributes such as Code, Name, Symbol, and so forth cannot be updated by means of configuration package import. The **Currency** tab content is update upon every import. If the exchange rates, defined for currencies in the source shell template, do not exist in the destination environment, the system creates a new exchange rate record for that currency and that exchange rate will be set to Active, and:

- The Effective is set to the configuration package Import Date.
- The Peg rate is brought over from the source environment.
- The Float rate is brought over from the source environment, if the rate does not exist in the destination environment.

Calendar

The calendar, from the **Calendar** tab, is included as a part of the configuration package. If the selected calendar does not exist, the system creates one in the destination environment.

Shell Details

The following shell details, in the form, will be exported and imported in the destination environment upon every import:

- Text fields, Pull downs (Integer and String), Radio buttons, Check boxes, Integer, Decimal and Currency Amounts, and Dates. The data set values, or the default values, will not transfer unless you include those in your configuration package.

Note

Any picker that refers to some other design object like BP pickers, data pickers, and so forth will not be included.

- The contents of the **Organize** tab (shell configuration), which defines the shell hierarchy, will be included. This includes the defined sub-shells.

Shells cannot be created if you do not activate them in the **Configuration** module.

The configuration package creation will fail if:

- The design of the included shell is not a part of the component list.
- The shell design version that is included in the component list does not match the deployed Shell design version.

Business Processes

- A Shell Template can have several Business Processes in the **Development/Test** environment.
- Only those Business Processes that have been included in the configuration package, marked as publish for production, can be transferred to the **Production** environment.
- The configuration package can contain Workflows that have been set up (activated in Configuration module). If there are multiple Workflow setups in a Business Process, all the setups are included in the configuration package, regardless of the status.
- Business Processes, and other design objects, in a template depend on their setups in the Configuration module. Only the configuration setups of the Business Processes, and the Shell that the Business Process resides in, are included in the template can be a part of the configuration package.
- In Workflow setups, where additional filtering on assignees exists for steps, the published design for the User Attributes form in the configuration package must include the deployed design.
- In Workflow setups, in case the **Advance workflow when next step is determined** option is selected:
 - When the user updates shells (Update Shells option), all the shells (or the selected shells) will receive the next step setup.
 - When the user updates a BP setup, from an environment different than the current environment, the next step setup will be imported.

User-Defined Reports (UDRs)

You can transfer User-Defined Reports (UDRs) that have been included in a Shell Template from **Development/Test** environment to **Production** environment. The data source for the reports can be a design, a Data View, or a system-provided source.

Single Record Business Process (BP)

The data from the Single Record BP gets exported from the source environment and then gets imported into the destination environment. This includes: Text fields, Pull downs (Integer and String), Radio buttons, Check boxes, Integer, Decimal and Currency Amounts, and Dates. The data set values, or the default values, will not transfer unless you include those in your configuration package.

The following data/items are not included in the configuration package:

- Any picker that refers to some other design object like BP pickers or data pickers.
- Attachments, linked records, and general comments.

Groups and Users

- Only the Shell Administrator user will be extracted for User Mapping, when importing the configuration package.
- Only groups will be extracted for the selected components in the shell templates.

Access Control

- For both Admin and User modes, the user can select the permissions for the Design objects in shell templates.

Updating Shell Formation - General Procedure

In general, the Update Shells feature works like this:

Step 1. In Admin mode, open a shell type template.

Step 2. Navigate to one of the modules listed above. Add or edit data.

Step 3. From the toolbar, select **Update Shells**. Select which information within the module to update and which of your active or on-hold shells to "push" the information to. New information will be added to the selected shells. Edited information will overwrite existing data.

You can also cancel a shell update before it reaches the In Process status.

Detailed instructions for updating specific types of shell information are found in the following sections.

Updating Shells, Users

You can add new users to multiple shells at once by adding them to a shell template through the **User Administration** node and **Users** sub-node.

When adding new users to a shell, you can assign individual permissions directly to the new user, or add the user to a group to apply group permissions.

The Update Shells process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Users are identified by their unique User ID.
- Any **Active**, **Inactive** or **On-hold** users can be pushed.
- Users can be pushed to **Active**, **Inactive**, **On-Hold**, or **View Only** shells.
- If the user does not exist in the shell, the user will be added to the shell with the permission settings and group membership.
- If the user exists in the shell, the user information is updated (replaced) with the user information as entered in the shell template. This includes permission settings and group membership.
- If a group that the user was added to does not exist in the shell, the group will be added, and the user will be added to the group. Group permissions are not updated; this is done by updating groups.
- If the group exists, the user will be added to it. Group properties and permissions will not be affected.

To add or update users using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **User Administration**, and then select **Users**.
5. Add a user to the shell type template, or select a user to edit. Define user parameters and assign permissions.
6. Select one or more users in the Users log.
7. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.
An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.
8. To proceed with the update, select **Yes**.

To delete users:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell type template to update.
4. In the shell type template, navigate to **User Administration**, and then select **Users**.
5. If you are not an administrator or owner of an item in the template:

- a. Select the shell user for deletion.
- b. You can select the **Usage** option, which downloads the usage report.
- c. The usage report lists all the references of the selected user in the template. You can check if the deletion would impact any area of the usage report.
- d. Select the **Delete** option.
- e. A confirmation message is displayed along with **Yes** and **No** options.
- f. If you choose **Yes**, the item is deleted and all the user references are removed from the template.

The system deletes the user even if the selected user is the only user under the **Assignee** section of any workflow BP. You must manually open the BP and save the user to move them to an **Inactive** status. You can also assign a new user in the workflow.

6. If the selected user is an owner of a document, cost sheet, work sheet, schedule sheet, or User-defined report:
 - a. Select a user ID, and select the **Delete** option.
 - b. A confirmation message is displayed along with **Yes** and **No** options.
 - c. If you choose **Yes**, the system closes the message and automatically downloads the usage report without performing a deletion. You can refer to the usage report to understand the impact areas and take the necessary action.
 7. If you select multiple users and all of them are owners of a document, cost sheet, work sheet, schedule sheet, or User-defined report:
 - a. Select the user IDs, and select the **Delete** option.
 - b. A confirmation message is displayed along with **Yes** and **No** options.
 - c. If you choose **Yes**, the system closes the message and automatically downloads the usage report for all the selected users without performing a deletion. You can refer to the usage report to understand the impact areas and take the necessary action.
 8. If you select multiple users and none of them are owners of any content in the template:
 - a. Select the users, and select the **Delete** option.
 - b. You can select all the users, and select the **Usage** option, which downloads the combined usage report for all the selected users.
 - c. A confirmation message is displayed along with **Yes** and **No** options.
 - d. If you choose **Yes**, the system deletes all the selected users.
 9. If you select multiple users and a few of them are owners of some elements in the template:
 - a. Select the users, and select the **Usage** option.
 - b. The system downloads the combined usage report for all the selected users.
 - c. Select the **Delete** option.
 - d. A confirmation message is displayed along with **Yes** and **No** options.
 - e. If you choose **Yes**, the system automatically downloads the usage report for the remaining users who are restricted from deletion.
 - f. Another confirmation message is displayed along with **Yes** and **No** options.
 - g. If you choose **Yes**, the system deletes the selected users that are not owners.
- You can refer to the usage report to further understand why some users cannot be deleted.

10. The push functionality and the copy shells work the same as they did previously. If a user is deleted and the record can no longer be selected, a push cannot be performed. However, if a user is deleted and the shell template is copied to create a new template, the deleted user would no longer be included. When a user is deleted and the shell is selected for download as part of a **Component List** in a **Configuration Package**, the deleted user is no longer part of the package. Any existing shells are not affected by the changes made and the deletions performed.

Updating Shells, Groups

You can add or update Group names and Group permissions by using the **Update Shells** option. That is to state, when you push Groups:

- Groups will be added or updated
- Groups Permission will be added or replaced

The update process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the **End Date** column in the **Update History** window shows the date that it was completed.

- Groups are identified by their unique Group Name.
- All group properties, including permission settings, will be added or updated in the shells that you selected.
- Groups can be pushed to **Active**, **Inactive**, **On-Hold**, or **View Only** shells.
- If the group does not exist, the group will be created with the permission settings. Group membership (user list) will not be updated in the shell.
- If a group of that name exists, the properties and permissions of that group will be replaced with the new group, but not the list of users.
- Users are not automatically added to the group; they need to be added by updating users (group membership).

To add or edit user groups using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **User Administration**, and then select **Groups**.
5. Select one or more groups from the **Groups** log.
6. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

7. To proceed with the update, select **Yes**.

To delete user groups:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **User Administration**, and then select **Groups**.
5. If you select a single group in the template:
 - a. Select the shell group.
 - b. You can select the **Usage** option, which downloads the usage report for the selected group. This behavior is dependent on the browser you are working in.
 - c. The usage report lists all the references of the selected group in the template. You can check if the deletion would impact any area of the usage report.
 - d. Select the **Delete** option.
 - e. A confirmation message is displayed along with **Yes** and **No** options.
 - f. If you choose **Yes**, the item is deleted and all references of the selected group are removed from the template.
 - The system deletes the group even if the selected group is the only assignee in any workflow BP. You must manually open the BP and save the group for it to move to an **Inactive** status. You can also assign a new user in the workflow.
 - The system should not allow the deletion of the **Project Administrators** group. If you select the **Project Administrators** group and select the **Delete** option, a confirmation message is displayed along with an **OK** option. Select the **OK** option to proceed further. You can select the **Project Administrators** group and select the **Usage** option to download the usage report for the group.
6. If you select other groups apart from **Project Administrators**:
 - a. Select the shell groups.
 - b. You can select the **Usage** option, which downloads the combined usage report for the selected groups. This behavior is dependent on the browser you are working in.
 - c. The usage report lists all the references of the selected groups in the template. You can check if the deletion would impact any area of the usage report.
 - d. Select the **Delete** option.
 - e. A confirmation message is displayed along with **Yes** and **No** options.
 - f. If you choose **Yes**, the item is deleted and all references of the selected groups are removed from the template.

The system deletes the groups even if the selected group is the only group under the **Assignee** section of any workflow BP. You must manually open the BP and save the group for it to move to an **Inactive** status. You can also assign a new user in the workflow.

7. If you select multiple groups for deletion that include **Project Administrators**:
 - a. Select multiple shell groups.
 - b. You can select the **Usage** option, which downloads the combined usage report for the selected groups. This behavior is dependent on the browser you are working in.

- c. The usage report lists all the references of the selected groups in the template. You can check if the deletion would impact any area of the usage report.
 - d. Select the **Delete** option.
 - e. A confirmation message is displayed along with **Yes** and **No** options.
 - f. If you choose **Yes**, the system displays another confirmation message along with **Yes** and **No** options. If you select **No**, the operation is aborted.
 - g. If you choose **Yes**, the selected groups, apart from the **Project Administrators** group, are deleted. If you select **No**, the deletion is not performed.
8. The push functionality and the copy shells work the same as they did previously. If a group is deleted and the record can no longer be selected, a push cannot be performed. However, if a group is deleted and the shell template is copied to create a template, the deleted group would no longer be included.

Updating Shells - Setup Node, Business Process

You can add and update new business processes or add additional business process (BP) setups to existing business processes.

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

The business process setup is identified by the unique combination of business process name, setup name, and workflow name.

If the business process name does not exist, it will be added to project with the BP Setup and permissions.

If the BP exists, but the BP Setup does not, it will be added to the BP.

If the BP and BP Setup exist, the Setup will be replaced with the new one.

Users and Groups that are part of a BP setup as assignees are added/updated, but not permissions. If a group is created, it will be empty. Users must be added to the group separately through user administration. If a group is created, it will be empty. Users must be added to the group separately through user administration.

BP-related permissions are added/updated.

To add or update business process setups using **Update Shells**:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the shell type template, navigate to **Setup**, and then select **Business Processes**.
5. Add any new business processes, if applicable. (The BP must already have been imported into the system and configured at the company level.)

Note

You can also add multiple Base Commit BPs with Payment Applications and corresponding SOVs.

6. To add or edit business process setups, select the BP to update in the **Business Processes** log. Select **Open**. The BP Setup log opens.
7. Create a setup or modify an existing setup. You may create as many setups as you want to make available in the shell(s).
8. Select one or more setups from the **BP Setup** log.
9. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.
10. To proceed with the update, select **Yes**.

Conditions for Creating a Business Process setup Configuration Package

When you include a *Workflow Business Process* setup for Configuration Package:

- If it is a first time export, you must include the BP design in the configuration package.
- For subsequent exports, you must include the latest BP design in the configuration package.

When you include a *non-Workflow Business Process* setup for Configuration Package:

- If it is a first time export, you must include the BP design in the configuration package.
- For subsequent exports, if you have included the Data Element used in the setup (for example, Auto Creation setup) in the configuration package, then:
 - If published, it will automatically be included in configuration package, by including the BP setup.
 - If not published, you must include the BP design as well.

At the time of import, the system transfers the setup information of the design object, irrespective of the Configuration status (Active/Inactive).

For best results, include your design object for Configuration Package after you change the configuration of your design.

Workflow Setup for Workflow Business Processes

You have the ability to delete (select **Delete** or select **Edit** and then select **Delete**) an inactive Workflow setup for Workflow Business Processes in a shell template so that they are not

included when a particular BP setup is included in the component list for a configuration package.

Updating Record Properties tab in the BP Setups

In a shell template, if users or groups have access restrictions to the Audit log, Workflow Progress tab, and Record Properties tab of the BP, then when you push the BP setup to the shells (selected shells or all shells) those restrictions will be pushed as well. Also, if users or groups with access restrictions are not included in the shell, those users or groups will be added as the members of the shell.

The confirmation message (when pushing BP setup into projects/shells from template) will have additional information: "Users and groups permissions, in the Record Properties tab, are added to the shell and existing permissions will be updated."

Activity Sheets Set Up with Oracle Integration in Projects/Shells

If your company administrator has configured Unifier with Oracle Integration as the default integration engine, you can use this procedure to update system and manual activity sheets in project/shells.

Prerequisites

- Oracle Integration is enabled as the default integration engine in the Company Workspace.
- You have the required permissions to set up activity sheets in projects/shells.

Procedure

To update projects/shells with system and manual activity sheets to get and send data by using Oracle Integration as the default integration engine:

1. Go to the targeted project/shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Activity Sheets**.
3. For each activity sheet in the **Name** column, select an integration recipe from the **Integration** drop-down list to get or send data, and then select **Save**.

Updating Shells - Setup Node, Dashboards

You can add new dashboards to shell instances, for users to view. You can assign the user View permission to the shell instance dashboards.

The Update process runs in the background. Depending on the number of shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- If granted View permission, users can view shell instance dashboards, but cannot modify them.
- If a user or group is added to shell instance dashboard permissions and that user or group does not exist in the shell, that user or group is added to the shell upon update.
- If a user has created **My Dashboard** in **User** mode for a shell, that dashboard is not overwritten by Update Shells.
- The default setting for the dashboard will be added or updated. Users and groups who have view permissions to the default dashboard will have the default setting updated.

To add or update shell instance dashboards using Update:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, open the **[shell type]**, and then open the **[shell instance]**.
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The **Dashboards** log opens.
4. Select one or more shell instance dashboards from the Dashboards log.
5. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.
An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.
6. To proceed with the update, select **Yes**.

Conditions for Creating a Dashboard Setup Configuration Package

Note

You must include the Data Cubes used in the Dashboard.

The first time that you export a Dashboard, you must include all design objects that form the Dashboard data source in the Configuration Package.

For subsequent exports, ensure that the design object that uses the Data Element that is specifically used in the setup is present in the Production Published Package. If this condition is met, the configuration package creation will be successful. If this condition is not met, the

latest design will have to be included in the configuration package. When the data source is a business process, the setup must also be included in the configuration package. Otherwise, the creation process will not complete.

Dashboards Components in the Configuration Package

The system includes the following components of a dashboard in the Configuration Package (.zip file):

Dashboards	Component	Field / Option
Dashboard	Log	Name
Dashboard	Log	Description
Dashboard	Log	Permissions
Dashboard	Tab Block	Tab Name
Dashboard	Tab Block	Tab Layout
Dashboard	Tab Block	Show option
Dashboard	Tab Block	Filters
Dashboard	Source Details / Analytics Block	Block Order
Dashboard	Source Details / Analytics Block	Block Title
Dashboard	Source Details / Analytics Block	Source Name
Dashboard	Source Details / Analytics Block	Block Type
Dashboard	Analytics Block	URL The URL value will be blank in the Export package. Import process will plug in the default value based on the Unifier Configurator property.
Dashboard	Custom Block	Data Cube
Dashboard	Custom Block	Show Data From
Dashboard	Custom Block	Block Title
Dashboard	Custom Block	Display Type
Dashboard	Custom Block	Source Grouped By (If Group By option is a design object then that design should also be included in the Configuration Package)
Dashboard	Custom Block	Output Type
Dashboard	Custom Block	Report On
Dashboard	Custom Block	Summary Type
Dashboard	Custom Block	Show Result
Dashboard	Custom Block	Show Total
Dashboard	Custom Block	Decimal Places
Dashboard	Custom Block	Currency Format
Dashboard	Drilldown Block	Data Cube
Dashboard	Drilldown Block	Block Title
Dashboard	Drilldown Block	Block Filter Elements (If filter elements are design objects, they must be included in the Configuration Package as well.)
Dashboard	Drilldown Block / Edit Drilldown Details	Title
Dashboard	Drilldown Block / Edit Drilldown Details	Show Data From

Dashboards	Component	Field / Option
Dashboard	Drilldown Block / Edit Drilldown Details	Display Type
Dashboard	Drilldown Block / Edit Drilldown Details	Source Grouped By (If Group By option is a design object then that design must also be included in the Configuration Package.)
Dashboard	Drilldown Block / Edit Drilldown Details	Output Type
Dashboard	Drilldown Block / Edit Drilldown Details	Report On
Dashboard	Drilldown Block / Edit Drilldown Details	Summary Type
Dashboard	Drilldown Block / Edit Drilldown Details	Show Result
Dashboard	Drilldown Block / Edit Drilldown Details	Show Total
Dashboard	Drilldown Block / Edit Drilldown Details	Decimal Places
Dashboard	Drilldown Block / Edit Drilldown Details	Currency Format
Dashboard	Portlet Block	Name
Dashboard	Portlet Block	URL • Use Reset to reset the URL. • Use Get Parameters to get parameters from the URL as populated by the user in URL text box. When received, use the URL Parameter Mapping menu (accordion) to pass the values to the parameters in URLs, by mapping those to fields from Shell Attribute Form, and then format the values so that the URL can render in the dashboard during runtime, correctly.
Dashboard	Standard Block	Source Name
Dashboard	Standard Block	Data Type (If Data Type option is a design object then that design must also be included in the Configuration Package)
Dashboard	Standard Block	Report On
Dashboard	Standard Block	Block Title
Dashboard	Standard Block	Display Type
Dashboard	Standard Block	Show Result
Dashboard	Standard Block	Show Total
Dashboard	Standard Block	Decimal Places
Dashboard	Standard Block	Currency Format

Updating Shells - Setup Node, Gates

You can update shells with Active or Inactive Gates setups. The Update Shells process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Important Information About Updating Gates (Project Phase Gates) Setups:

- The Gates setup update will completely overwrite any existing Gates setup, or will be added if it did not previously exist.
- Previously scheduled Gates Runs are overwritten by the new Gates setup. If the pushed setup is Active, new scheduled Gates Runs are scheduled according to the schedule in the new setup.
- Both Inactive and Active Gates setups can be pushed in the update.
- After the update, the Gates setup reflects the status of the template.
- After the update, the Current Phase in the Gates setup is reset to the First Phase.
- After the update, the Gates shells will not run the scheduled refresh if the shell is On-Hold. Gates scheduling will resume automatically when the shell becomes Active.
- If you have permission to create Gates setups, you can update Gates setups using Update Shell, even if you do not have permission to access the individual shells.
- The phase conditions that have been completed already will reset to incomplete, by the system.
- Users and groups specified in the Email Notification field are added if they do not exist.
- Newly-created groups are empty.
- Any conditions that had been previously checked to be ignored will not be checked again, and the information about the user who had checked the ignore option will be lost.
- If the Ignore checkbox has been used for any of the phase completion conditions, the project will not be set to where it was in the Phase Gates progress prior to the template update.

Note

Post update, the next time that the system picks up the scheduled runs, the status of the gate phases may vary depending on the setup.

To update Gates setups using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, open the [shell type], and then open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Gates**.
4. Select a Gates setup.
5. From the toolbar, select **Update Shells**, and select one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.

- **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

6. To proceed with the update, select **Yes**.

Conditions for Creating Gates setup Configuration Package

The first time that you export the Gates setup, you must include the data sources for the query condition used in the Gates setup.

For subsequent exports, ensure that the design which uses the Data Element that is specifically used in the setup is present in the Production Published package. If this condition is met, the package creation will be successful. If this condition is not met, the latest design will have to be included in the package.

Gates Components in the Configuration Package

The system includes the following components of Gates in the Configuration Package (.zip file):

Gates Component	Field / Option
Log	Name
Log	Status
Gates / General tab	Name
Gates / General tab	Description
Gates / General tab	Status
Gates / Settings tab	Phase name
Gates / Settings tab / Phase Gate Configuration	All options
 Note If the option of Start Date and Planned Completion dates are from Schedule sheet, only the dates will get copied over. The Master schedule sheet will not get copied over.	
Gates / Settings tab / Gate Condition Elements	All Gate Condition Elements. The corresponding Data type selected for the gate condition should also be included in the Configuration Package.
Gates / Settings tab / Gate Conditions	All query conditions set up within the Gate condition
Gates / Settings tab	Advance to next Project option
Gates / Settings tab / Additional Information block	All options including Users and Groups
Gates / Settings tab	Reevaluate conditions on every Gates Run option
Gates / Schedule tab	All options including the users and groups set for email notifications.

Updating Shells - Setup Node, Planning Manager

A Shell template might have many planning items in the **Development/Test** environment; however, not all the planning items might be ready for transfer to another environment.

To access the Shell template for Planning Manager:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Setup**, and then select **Planning Manager**.

You can select multiple items to include in your configuration package.

Conditions for Creating a Planning Manager setup Configuration Package

The first time that you include the Planning Manager setup information in a Configuration Package, you must include the corresponding design in the Configuration Package.

For subsequent exports, you do not need to include the latest design, if the design exists in the Published Configuration Package, already.

At the time of import, the system transfers the setup information of the design object, irrespective of the Configuration status (Active/Inactive).

Oracle recommends that after changing your design you include the updated design in the Configuration Package.

Planning Manager Components in the Configuration Package

The system includes the following components of Planning Manager in the Configuration Package (.zip file):

Component	Field / Option
Planning Manager Setup / <Item Name> / General tab	Setup Name
Planning Manager Setup / <Item Name> / General tab	Description
Planning Manager Setup / <Item Name> / General tab	Help File

Access Control for Planning Manager Setup

The configuration package includes permissions settings of Users and Groups from Shell templates, Planning Manager.

To see the permission settings for Dashboards:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Setup**, and select **Planning Manager** to open the **Module Permission Settings** window.
4. Proceed with adding, modifying, or removing permissions.

Updating Shells - Setup Node, Configurable Modules (Classes)

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.

3. In the left Navigator, select **Setup**, select **[Configurable Manager]**, and then select **[CM0 Classes]/[Class Name]**.

Any Configurable Manager of Code and Record type which have classes and which are setup in a Shell template can be packaged as part of the Configuration Package.

You can package any Configurable Manager of Code-type and Record-type as part of the Configuration Package, if the:

- Configurable Manager has classes
- Configurable Manager was set up in a Shell template

A shell template might have many CM Classes in the **Development/Test** environment; however not all CM Classes might be ready for transfer to another environment.

Conditions for Creating a CM Class setup Configuration Package

The first time that you include the setup information in the Configuration Package, you must include the corresponding design in the Configuration Package.

For subsequent exports, you do not need to include the corresponding design in the Configuration Package.

At the time of import, the system transfers the setup information of the design object, irrespective of the Configuration status (Active/Inactive).

Oracle recommends that you include your design object for Configuration Package after you change the configuration of your design.

CM Class Components in the Configuration Package

The system includes the following components of CM Class in the Configuration Package (.zip file):

Component	Field / Option
CM Class Setup / General	Setup Name
CM Class Setup / General	Description
CM Class Setup / General	Help File
CM Class Setup / General	Auto Creator
CM Class Setup / General	Send Error Notification to

Access Control for CM Class Setup

The Configuration Package includes permissions settings of Users and Groups from Shell templates, CM Class.

To see the permission settings for Dashboards:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Setup**, and select **Parts** to open the **Module Permission Settings** window.
4. Proceed with adding, modifying, or removing permissions.

Updating Shells - Configurable Modules Node (Sheets)

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Setup**, select **[Configurable Manager]**, and then select **[CM0 Sheet]/[Sheets Name]**.

The generic Cost Sheet template contains the generic cost-code type and setup of the Cost Sheet, in the shell template of a cost-code type generic shell.

You can include the CM0 setup that exists in a Shell template in the Shell Template Configuration Package.

Conditions for Creating a CM Class setup Configuration Package

The first time that you include the setup information in the Configuration Package, you must include the corresponding design in the Configuration Package.

For subsequent exports, you do not need to include the corresponding design in the Configuration Package.

At the time of import, the system transfers the setup information of the design object, irrespective of the Configuration status (Active/Inactive).

Oracle recommends that you include your design object for Configuration Package after you change the configuration of your design.

CM Class Components in the Configuration Package

The system includes the following components of CM Class in the Configuration Package (.zip file):

Component	Field / Option
CM Class Setup / General	Setup Name
CM Class Setup / General	Description
CM Class Setup / General	Help File
CM Class Setup / General	Auto Creator
CM Class Setup / General	Send Error Notification to

Updating Shells - Rules Node

Rules can be updated in CBS code-based shells.

The Update Shells process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Both active and inactive rules can be pushed.
- Rules are identified by the combination of rule name and the source.
- If the rule does not exist, it will be added.
- If a rule exists with the same name and source, that rule will be updated. This includes the status: for example, if the rule being pushed is active and the rule in the shell is inactive, the system will update the existing rule and activate it.
- It is possible to have more than one rule with the same name and source in a project/shell or template. If two or more rules exist with the same name and source as the rule being pushed, the update will not occur and will give an error.
- When the update process begins, the system will first attempt to validate each rule (equivalent to selecting Validate). This will occur whether the rule is active or inactive in the template. If the rule is validated successfully, the system will proceed with the update.
- If the rule fails validation, the rule will not be pushed. The attempt will be captured in the History.

To update rules using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the Shell Template, navigate to **Rules**.
5. Select one or more rules from the log.
6. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

7. To proceed with the update, select **Yes**.

Conditions for Creating a Rules setup Configuration Package

The first time that you package the Rules Setup information, you must include the following in the package:

- Design of the Business Processes used in the Rule definition.
- Corresponding designs.

The design for Configuration Package.

For subsequent exports, ensure that the design that uses the Data Element that is specifically used in the setup is present in the Production Published package. If this condition is met, the package creation will be successful. If this condition is not met, the latest design will have to be included in the package.

Importing of Rules based on Rule Status

① Note

For both Active and Inactive, the system does not check for the existence of the specific CBS codes in the Cost Sheet (Applicable where the Rule definition uses CBS codes).

Rules with Active Status

At the time of Import, ensure that:

- The Cost Sheet or Funding Sheet, used in Rules definition, exists either in the Package or in the destination server.
- The data source is present, as a column, in the Funding sheet.
- The cost sheet columns or the Funding Sheet columns used in Rule definition required for Rule Activation are present either in the package or in the destination server.

When CBS codes are used, ensure that the Cost Sheet used for Rules definition exists either in the Package or in the destination server.

Rules with Inactive Status

The system does not perform any checks at the time of import.

Rules Components in the Configuration Package

The system includes the following components of Rules in the Configuration Package (.zip file):

Component	Field / Option
Rule Properties / General	Name
Rule Properties / General	Description
Rule Properties / General	Control Source
Rule Properties / General	Rule Level
Rule Properties / General	Status
Rule Properties / General	Users / Groups who can override field. Users and groups will be part of the Configuration Package. (Applicable only for Rule level = Per selected CBS Codes and Per selected summary CBS codes)
Rule Properties / General	Notify Users / Groups when overridden field. Users and groups will be part of the Configuration Package. (Applicable only for Rule level = Per selected CBS Codes and Per selected summary CBS codes)
Rule Properties / Rule	Limit expression formula: Formula string. The formula string contains BPs.

Component	Field / Option
Rule Properties / Rule	Data Expression: Might be a formula using BP data sources.
Rule Properties / Rule	Message when condition not met.
Rule Properties / CBS Codes	CBS Codes (Applicable only for Rule level = Per selected CBS Codes and Per selected summary CBS codes)

Updating Shells - Cost Manager Node, Cash Flow

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.

The Cash Flow module lets you generate and compare Baseline, Actuals (or “spends”), Portfolio, Forecast, and Custom curves in a project or CBS code-based Shell.

You can use a Cash Flow Curve template to create cash flow curves in CBS-code based Shells.

All Cash Flows defined in a shell template will be included in the Configuration Package.

You can select and include multiple items in the Configuration Package.

Conditions for Creating a Cash Flow Setup Configuration Package

Detail	Curve type	Component	Check
Project/Level Summary CBS CBS Commitment	Any	Cost = Distribute amount from cost sheet column ensure that the checks relevant to Cost Sheet are performed. If above conditions are not met, you will see an error.	Cost Sheet in the shell template.
Project/Level Summary CBS CBS Commitment	Any	Schedule = Use dates from Schedule Sheet	Schedule Sheet in the shell template.
Project/Level Summary CBS CBS Commitment	Any	Filter set to specific CBS Codes	When the Filter is set to specific CBS codes, ensure that the Cost Sheet in the Shell template has also been included.
Commitment	Any	Commitment Business Processes both Commitment and Change Orders	Commit Business Process selected must be included in the Configuration Package. If this condition is not met, throw an error.

Cash Flow Components in the Configuration Package

The system includes the following components of Cash Flow in the Configuration Package (.zip file):

- Cash Flow content - Detail Level: Project/Shell
- Cash Flow content - Detail Level: Summary CBS
- Cash Flow content - Detail Level: CBS
- Cash Flow content - Detail Level: Commitment

Note

For "Additional checks required" see to Conditions for Creating a Cash Flow setup Configuration Package, in this topic.

Cash Flow content - Detail Level: Project/Shell

Component	Field / Option
Cash Flow Properties / General	All fields
Cash Flow Properties / Curves	All Curves
Cash Flow Properties / Curves / Curve type - Baseline	All fields including the selected options for Distribution, Cost and Schedule. 1 - If Distribution = Auto by default profile, the Distribution Profile will be included in the Configuration Package. 2 - If Cost = Distribute amount from cost sheet column, all the cost sheet columns available for selection will be included in the Configuration Package. In addition to this, the value selected for this field will also be included in the Configuration Package. Additional checks required. Note that Cost Sheet must always be included in the Package. 3 - If Schedule = Use dates from Schedule Sheet, the schedule sheet selected in the field should be included in the Package. Additional checks required. DEs selected in the From Date and To Date fields will also be included in the Configuration Package in addition to the possible values of the Schedule sheet DEs.
Cash Flow Properties / Curves / Curve type - Forecast / General	All fields including the selected options for Distribution, Cost and Schedule. Behavior to be the same as the one outlined in Cash Flow / Curves / Baseline
Cash Flow Properties / Curves / Curve type - Forecast / Options	All options selected for the Forecast Curve will be included in the Configuration Package

Component	Field / Option
Cash Flow Properties / Curves / Curve type - Portfolio Budget	All fields selected for the Forecast Curve will be included in the Configuration Package 1 - Additional checks might be needed for Portfolio Manager related Configuration. 2 - Currency is a required field for Portfolio Budget curve. The default value is set to the Project Currency. However, this currency might differ from the Project Currency. It could be any of the Active and Future currencies listed in the Exchange Rate table. Therefore, if the currency differs from the Project Currency then in addition to the Currency value specified in this field, the currency and its exchange rate information will also be included in the Configuration Package. Rules for creating Currencies and Exchange Rates - Currency will get created if it does not exist - Currency attributes such as Code, Name, Symbol, and so on, will not be updated by means of Package import. - Currency tab content will get updated upon every import. If exchange rates defined for currencies in the source shell template do not exist in the destination environment, a new exchange rate record will get created for that currency and that exchange rate will be set to Active. - The Effective date will be set to the Package Import Date. - The Peg rate will be brought over from the source environment. - The float rate will be brought over if the rate does not exist in the destination environment.
Cash Flow Properties / Curves / Curve type - Actuals	All fields selected for the Forecast Curve will be included in the Configuration Package. Additional checks required.
Cash Flow Properties / Filter	Selected Filter options If Filter = Select Summary CBS OR Select CBS codes, the selected CBS codes will be included as part of Filter options.
Cash Flow Properties / Options	The selected option, Decimal Options or Use Currency Decimal Precision, will be included in the Configuration Package.
Cash Flow Properties / Schedule	All options set in the Schedule tab will be included in the Configuration Package.
Cash Flow Properties / Summary	Not applicable in templates
Cash Flow / Permissions	Users and Groups
Cash Flow / Filters	Filters defined for the curves will also be included in the Package

Cash Flow content - Detail Level: Summary CBS

Component	Field / Option
Cash Flow Properties / General	All fields

Component	Field / Option
Cash Flow Properties / Curves	All Curves
Cash Flow Properties / Curves / Curve type - Baseline	All fields including the selected options for Distribution, Cost and Schedule. 1- If Distribution = Auto by default profile per summary CBS, the Distribution Profile for the corresponding Summary CBS code will be included in the Configuration Package. Additional checks required. 2- If Cost = Distribute amount from cost sheet column, all the cost sheet columns available for selection will be included in the Configuration Package. In addition to this, the value selected for this field will also be included in the Configuration Package. Additional checks required. Note that Cost Sheet must always be included in the Package. 3- If Schedule = Use dates from Schedule Sheet, the schedule sheet selected in the field should be included in the Package. Additional checks required. DEs selected in the From Date and To Date fields will also be included in the Configuration Package in addition to the possible values of the Schedule sheet DEs.
Cash Flow Properties / Curves / Curve type - Forecast / General	All fields including the selected options for Distribution, Cost and Schedule. Behavior to be the same as the one outlined in Cash Flow / Curves / Baseline
Cash Flow Properties / Curves / Curve type - Forecast / Options	All options selected for the Forecast Curve will be included in the Configuration Package

Component	Field / Option
Cash Flow Properties / Curves / Curve type - Portfolio Budget	All fields selected for the Portfolio Budget Curve will be included in the Configuration Package. 1- Additional checks might be needed for Portfolio Manager related Configuration. 2- Currency is a required field for Portfolio Budget curve. The default value is set to the Project Currency. However, this currency might differ from the Project Currency. It could be any of the Active and Future currencies listed in the Exchange Rate table. Therefore, if the currency differs from the Project Currency then in addition to the Currency value specified in this field, the currency and its exchange rate information will also be included in the Configuration Package. Rules for creating Currencies and Exchange Rates - Currency will get created if it does not exist - Currency attributes such as Code, Name, Symbol, and so on, will not be updated by means of Package import. - Currency tab content will get updated upon every import. If exchange rates defined for currencies in the source shell template do not exist in the destination environment, a new exchange rate record will get created for that currency and that exchange rate will be set to Active. - The Effective date will be set to the Package Import Date. - The Peg rate will be brought over from the source environment. - The float rate will be brought over if the rate does not exist in the destination environment.
Cash Flow Properties / Curves / Curve type - Actuals	All fields selected for the Forecast Curve will be included in the Configuration Package. Additional checks required.
Cash Flow Properties / Filter	Selected Filter options If Filter = Select Summary CBS, the selected Summary CBS codes will be included as part of Filter options. Additional checks required.
Cash Flow Properties / Options	The selected option, Decimal Options or Use Currency Decimal Precision, will be included in the Configuration Package.
Cash Flow Properties / Schedule	All options set in the Schedule tab will be included in the Configuration Package.
Cash Flow Properties / Summary	Not applicable in templates
Cash Flow / Permissions	Users and Groups
Cash Flow / Filters	Filters defined for the curves will also be included in the Package

Cash Flow content - Detail Level: CBS

Component	Field / Option
Cash Flow Properties / General	All fields

Component	Field / Option
Cash Flow Properties / Curves	All Curves
Cash Flow Properties / Curves / Curve type - Baseline	All fields including the selected options for Distribution, Cost and Schedule. Distribution Case 1: Auto by default profile per CBS, the Distribution Profile for the corresponding CBS code will be included in the Configuration Package. Additional checks required. Note Cost Sheet must always be included in the Package. Case 2: Use data from Schedule Sheet, the schedule sheet will be included in the Configuration Package. Additional checks required. Case 3: Use data from P6 Source, the P6 source selected in the curve will also be included in the Configuration Package. If Cost = Distribute amount from cost sheet column, all the cost sheet columns available for selection will be included in the Configuration Package. In addition to this, the value selected for this field will also be included in the Configuration Package. Additional checks required. Schedule Case 1: Use dates from Schedule Sheet, the schedule sheet selected in the field should be included in the Package. Additional checks required. DEs selected in the From Date and To Date fields will also be included in the Configuration Package in addition to the possible values of the Schedule sheet DEs. Case 2: Use dates from P6 Source, the P6 source selected in the curve will also be included in the Configuration Package.
Cash Flow Properties / Curves / Curve type - Forecast / General	All fields including the selected options for Distribution, Cost and Schedule. Behavior to be the same as the one outlined in Cash Flow / Curves / Baseline
Cash Flow Properties / Curves / Curve type - Portfolio Budget	All fields selected for the Portfolio Budget Curve will be included in the Configuration Package
Cash Flow Properties / Curves / Curve type - Forecast / Options	All options selected for the Forecast Curve will be included in the Configuration Package

Component	Field / Option
Cash Flow Properties / Curves / Curve type - Portfolio Budget	All fields selected for the Portfolio Budget Curve will be included in the Configuration Package 1- Additional checks might be needed for Portfolio Manager related Configuration. 2- Currency is a required field for Portfolio Budget curve. The default value is set to the Project Currency. However, this currency might differ from the Project Currency. It could be any of the Active and Future currencies listed in the Exchange Rate table. Therefore, if the currency differs from the Project Currency then in addition to the Currency value specified in this field, the currency and its exchange rate information will also be included in the Configuration Package. Rules for creating Currencies and Exchange Rates - Currency will get created if it does not exist - Currency attributes such as Code, Name, Symbol, and so on, will not be updated by means of Package import. - Currency tab content will get updated upon every import. If exchange rates defined for currencies in the source shell template do not exist in the destination environment, a new exchange rate record will get created for that currency and that exchange rate will be set to Active. - The Effective date will be set to the Package Import Date. - The Peg rate will be brought over from the source environment. - The float rate will be brought over if the rate does not exist in the destination environment.
Cash Flow Properties / Curves / Curve type - Actuals	All fields selected for the Actuals Curve will be included in the Configuration Package. Additional checks required.
Cash Flow Properties / Filter	Selected Filter options If Filter = Select CBS, the selected CBS codes will be included as part of Filter options. Additional checks required.
Cash Flow Properties / Options	The selected option, Decimal Options or Use Currency Decimal Precision, will be included in the Configuration Package.
Cash Flow Properties / Schedule	All options set in the Schedule tab will be included in the Configuration Package.
Cash Flow Properties / Summary	Not applicable in templates?
Cash Flow / Permissions	Users and Groups
Cash Flow / Filters	Filters defined for the curves will also be included in the Package

Cash Flow content - Detail Level: Commitment

Component	Field / Option
Cash Flow Properties / General	All fields. Additional checks required for Business Processes.

Component	Field / Option
Cash Flow Properties / Curves	All Curves
Cash Flow Properties / Curves / Curve type - Baseline	All fields including the selected options for Cash flow granularity, Distribution and Commit BPs. Additional checks required for Business Processes.
Cash Flow Properties / Curves / Curve type - Forecast / General	All fields including the selected options for Cash flow granularity, Distribution and Commit BPs. If Distribution Method has a Profile, the Profile will also be included in the Configuration Package. Behavior to be the same as the one outlined in Cash Flow / Curves / Baseline
Cash Flow Properties / Curves / Curve type - Forecast / Options	All options selected for the Forecast Curve will be included in the Configuration Package
Cash Flow Properties / Curves / Curve type - Portfolio Budget	All fields selected for the Portfolio Budget Curve will be included in the Configuration Package 1- Additional checks might be needed for Portfolio Manager related Configuration. 2- Currency is a required field for Portfolio Budget curve. The default value is set to the Project Currency. However, this currency might differ from the Project Currency. It could be any of the Active and Future currencies listed in the Exchange Rate table. Therefore, if the currency differs from the Project Currency then in addition to the Currency value specified in this field, the currency and its exchange rate information will also be included in the Configuration Package. Rules for creating Currencies and Exchange Rates - Currency will get created if it does not exist - Currency attributes such as Code, Name, Symbol, and so on, will not be updated by means of Package import. - Currency tab content will get updated upon every import. If exchange rates defined for currencies in the source shell template do not exist in the destination environment, a new exchange rate record will get created for that currency and that exchange rate will be set to Active. - The Effective date will be set to the Package Import Date. - The Peg rate will be brought over from the source environment. - The float rate will be brought over if the rate does not exist in the destination environment.
Cash Flow Properties / Curves / Curve type - Actuals	All fields selected for the Actuals Curve will be included in the Configuration Package. Additional checks required.
Cash Flow Properties / Filter	Selected Filter options If Filter = Select CBS, the selected CBS codes will be included as part of Filter options. Additional checks required.
Cash Flow Properties / Options	The selected option, Decimal Options or Use Currency Decimal Precision, will be included in the Configuration Package.

Component	Field / Option
Cash Flow Properties / Schedule	All options set in the Schedule tab will be included in the Configuration Package.
Cash Flow Properties / Summary	Not applicable in templates.
Cash Flow / Permissions	Users and Groups
Cash Flow / Filters	Filters defined for the curves will also be included in the Package

Updating Shells - Cost Manager Node, Cost Sheet

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.

Conditions for Creating a Cost Sheet setup Configuration Package

When the Sheet Setup information is packaged for the first time, the Cost Attribute design must also be included in the configuration package. If this check fails, the package creation will result in an error. For subsequent exports, the deployed version of the design must match the Published version of the design. This is mainly being done since the package includes the Cost Sheet (CBS) rows and these depend on the deployed design.

This check will not be performed for customers who do not use Cost attribute forms. If the destination server has the cost attribute form, but the Configuration Package does not include the Cost Attribute design, the import will fail and an error will be displayed.

When the Sheet Setup information is packaged for the first time, the design of any data source used in the column definition of the sheet must be part of the package. If this check fails, the package creation will result in an error. For subsequent exports, check will be made to ensure that the design which uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Cost Sheet Components in the Configuration Package

The system includes the following components of Cost Sheet in the Configuration Package (.zip file):

Component	Field / Option
Cost Sheet / Properties / General	Title
Cost Sheet / Properties / General	Description
Cost Sheet / Properties / General	Default View
Cost Sheet / Properties / Structure	Structure option
Cost Sheet / Properties / Structure	All segments
Cost Sheet / Properties / Options	Labels
Cost Sheet / Properties / Options	Forecast Details option
Cost Sheet / Properties / Options	Forecast Inclusion
Cost Sheet / Properties / Options	Forecast Type

Component	Field / Option
Cost Sheet / Properties / Options	P6 Integration: Enable P6 Sources. When this option is selected and the Cost sheet has used any of the P6 Data Sources, the Configuration Package will also include the P6 Data sources defined in Standards & Libraries. If the P6 data sources do not exist in this destination, they will get created and be in a Published state. The system currently allows up to 12 P6 data sources to be defined in the server. So, at the time of Import, checks will have to be made to ensure that the total number of P6 data sources does not exceed 12.
Cost Sheet / Columns / Column Properties	All options Because the data source of a cost sheet column may be a Cost BP, additional checks are performed at the time of the Configuration Package creation to ensure that the BP is included in the Configuration Package as well. If the entry method uses Work Sheet, the Worksheet must be included in the Configuration Package. The package will also include the hidden columns.
Cost Sheet / Columns / Restrictions	Users and Groups setup for Restrictions.
Cost Sheet / Budget Distribution	The Budget Distribution option will be disabled at the Shell template level. Hence user cannot setup any distribution.
Cost Sheet / Fund Assignment order	The Fund assignment option will be disabled at the Shell template level.
Cost Sheet / CBS Codes	All rows which include CBS as well as Summary CBS codes along with the Breakdown. If the Cost Codes do not exist in the destination environment, that is, if user has not packaged the Cost Codes by selecting the Data Structure option and then selecting the Cost Codes option at the time of Package creation, the cost codes used in the Cost sheet will be brought over. However, the value/label pair defined in the Cost Code definitions will not be brought over.
Cost Sheet / Views	Any views that exist in the template are included in the configuration package.

Updating Shells - Cost Manager Node, Funding - Funding Sheet

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Funding**, and then select **Funding Sheet**.

A CBS Shell template can have a Funding Manager, which helps keep track of Funds. A Project/Shell Funding Sheet can be used to specify the appropriation and assignment of funds from each funding source.

The Funding Sheet setup in the shell template is included in the Configuration Package.

Note

Filters that you set up in the shell template for a Funding Sheet are not currently included in the Project/Shell Funding Sheet.

Conditions for Creating a Funding Sheet setup Configuration Package

The first time that you package the Sheet Setup information, the Fund Attribute design must also be included in the package, which means that the design must be included in the Configuration Package. If this check fails, the package creation will result in an error. The deployed version and the Published version of the design must match.

Note

Although you are not packaging the Funding Rows, the Company Fund sheet depends on the deployed version of the design. Fund codes in the Company Fund sheet are used to create the fund codes in the shell templates.

This check will not be performed for customers who do not use Fund Attribute Forms. If the destination server has the Fund Attribute Form, but the Configuration Package does not include the Fund Attribute design, the import will fail and an error will be displayed.

The first time that you package the Sheet Setup information, the design of any data source used in the column definition of the sheet must be part of the package. This means that these designs must be included in the Configuration Package. If this check fails, the package creation will result in an error. For subsequent exports, check will be made to ensure that the design that uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Funding Sheet Components in the Configuration Package

The system includes the following components of Funding Sheet in the Configuration Package (.zip file):

Component	Field / Option
Funding Sheet Properties / General	Title
Funding Sheet Properties / General	Description
Funding Sheet Properties / General	Display Mode
Funding Sheet Properties / Assignment / Project block	Process Contributing Assignable Funds
Funding Sheet Properties / Assignment / CBS block	CBS Fund Source
Funding Sheet Properties / Assignment / Assignment Levels block	Assignment Rules
Funding Sheet / Rows	The Fund rows are the ones that exist in the Company level Fund Sheet. As a result, this data will not be packaged.
Funding Sheet / Columns	All columns
Funding Sheet / Columns	All column properties. Because the data source of a Funding sheet column may be a Fund BP, additional checks are performed at the time of the Configuration Package creation to ensure that the Fund BP has been included in the Configuration Package as well.

Component	Field / Option
Funding Sheet / Fund assignment	Fund assignment order will not be carried over because it is dependent on the Funding rows.
Funding Sheet / Filters	All filters set in Funding sheet.  Note Filters that you set up in the shell template for a Funding Sheet are not currently included in the project/shell fund sheet.

Updating Shells - Cost Manager Node, Funding - Commitment Funding Sheet

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Funding**, and then select **Commitment Funding Sheet**.

A commitment funding sheet is created for each base commit that has been designed for Commitment Funding Sheet.

Funds can be allocated from the Shell template Funding sheet to the Commitment Funding Sheet. This sheet works in conjunction with the Schedule of Values (SOV) sheet to track base commit and change commit line items and balances. Commitment Funding Sheet templates are created and set up in the Templates node, and they are used to create the commitment funding sheet structure in a project/shell (or in a project/shell template).

This structure is then used when sheets are created for individual base commit records. A Commitment Funding Sheet in a shell template will be included in the Configuration Package.

The Structure option changes from Create Structure to Update Structure after a selection of the Commitment Funding sheet is made.

If the Structure has not yet been created then an error message will be seen.

This same behavior will be seen in the following logs:

- General Spends SOV
- Payment Applications SOV
- Summary Payment Applications SOV
- Document Manager (Structure creation is not applicable here)

Conditions for Creating a Commitment Funding setup Configuration Package

The first time that you package the Sheet Setup information, the design of any data source used in the column definition of the sheet must be part of the package.

This means that these designs must be included in the Configuration Package. If this check fails then the package creation will result in an error.

For subsequent exports, check will be made to ensure that the design which uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package.

If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Other dependency checks performed at the time of Import:

The first time that the Sheet Setup information is imported, the Funding Sheet defined in the shell template must also be included in the package. If this check fails, the package import will result in an error.

Commitment Funding Components in the Configuration Package

The system includes the following components of Commitment Funding in the Configuration Package (.zip file):

Component	Field / Option
Commitment Funding Sheet Properties / General	All fields
Commitment Funding Sheet Properties / Assignment	All selections

Updating Shells - Cost Manager Node, Schedule of Values - General Spends

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select **General Spends**.

The General Spends SOV structure setup, existing in a shell template, will be included in the Configuration Package. The structure in the shell template can be created from the SOV templates that exist at the company level.

The Structure option changes from Create Structure to Update Structure after a selection of the SOV Structure is made.

Conditions for Creating a General Spends setup Configuration Package

The first time that you package the SOV Setup, the design of any data source used in the column definition of the sheet must be part of the package. This means that these designs must be included in the Configuration Package. If this check fails then the package creation will result in an error. For subsequent exports, check will be made to ensure that the design which uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

General Spends Components in the Configuration Package

The system includes the following components of General Spends in the Configuration Package (.zip file):

Component	Field / Option
SOV Structure Properties/ General	All fields
SOV Structure Properties/ Options	All fields
SOV Structure / Columns	All columns including the data source and formula definitions

Updating Shells - Cost Manager Node, Schedule of Values - Payment Applications

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select **Payment Applications**.

Any Payment Application SOV structure setup existing in a shell template will be included in the Configuration Package.

The Structure option changes from Create Structure to Update Structure after a selection of the SOV Structure is made.

Conditions for Creating a Payment Applications setup Configuration Package

The first time that you package the SOV Setup, the design of any data source used in the column definition of the sheet must be part of the package.

This means that these designs must be included in the Configuration Package. If this check fails then the package creation will result in an error.

For subsequent exports, check will be made to ensure that the design which uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Other dependency checks performed at the time of Import:

The first time that the Pay App SOV Setup done in a shell Template is imported, the Cost sheet defined and set up in the shell template must also be included in the package. If this check fails then the package import will result in an error. For subsequent imports, the Cost sheet setup need not be part of the Import Package.

When the Pay App SOV Setup is packaged for the first time, the BP setup of the Payment Application BP must also be included in the package. If this check fails then the package import will result in an error. For subsequent imports, the Payment Application BP setup need not be part of the Import Package.

Payment Applications Components in the Configuration Package

The system includes the following components of Payment Applications in the Configuration Package (.zip file):

Component	Field / Option
Payment Application Properties / General	All fields

Component	Field / Option
Payment Application Properties / Options	All fields
Payment Application Structure / Columns	All columns

Updating Shells - Cost Manager Node, Schedule of Values - Summary Payment Applications

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select **Summary Payment Applications**.

Any Summary Payment Application SOV structure setup existing in a shell template will be included in the Configuration Package.

The Structure option changes from Create Structure to Update Structure after a selection of the SOV Structure is made.

The content is same as the one mentioned in the "Payment Application" section.

Conditions for Creating a Summary Payment Applications setup Configuration Package

The first time that you package the SOV Setup, the design of any data source used in the column definition of the sheet must be part of the package.

This means that these designs must be included in the Configuration Package. If this check fails then the package creation will result in an error.

For subsequent exports, check will be made to ensure that the design which uses the Data Element (ex: Status) that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Other dependency checks performed at the time of Import:

The first time that you import the Pay App SOV Setup done in a shell template, Cost sheet defined and setup in the shell template must also be included in the package. If this check fails then the package import will result in an error. For subsequent imports, the Cost sheet setup need not be part of the Import Package.

The first time that you package the Pay App SOV Setup, the BP setup of the Payment Application BP must also be included in the package. If this check fails then the package import will result in an error. For subsequent imports, the Payment Application BP setup need not be part of the Import Package.

Updating Shells - Document Manager Node

The Document Manager (DM), within a Shell template, contains the entire folder structure that a particular shell uses to manage all the relevant documents.

You can use the Document Manager template to update the structure and permissions, or just permissions across all shells or to selected shells of the same type. You can apply changes to

a single or the entire folder hierarchy in the destination shell. Update rules apply to each sub-option - for example, in the Structure & Permissions option, if a folder does not exist, it will be added

To push DM template changes and update shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Document Manager**, and then select **Documents**.
4. To update the structure and permissions:
 - a. From the toolbar, select **Update Shells**, and select **Structure & Permissions**.
 - b. To update all shells, select **All Shells**. To update selected shells, select **Shells**. From the Shell picker, select the shells, and select **Update Shell(s)**.
5. To update the permissions:
 - a. From the toolbar, select **Update Shells**, and select **Permissions only**.
 - b. To update all shells, select **All Shells**. To update selected shells, select **Shells**. From the Shell picker, select the shells, and select **Update Shell(s)**.
6. To view the history of the template, select **History** from the Update Shells menu.

The tagged Document Manager with folders set up in a tagged Shell template will be included in the Configuration Package.

Conditions for Creating a Document Manager setup Configuration Package

The first time that you package the Setup information, if the folder properties are based on a DM Attribute Form, the DM Attribute design must also be included in the package.

This means that the design must be included in the Configuration Package. If this check fails, the package creation will result in an error.

For subsequent exports, check will be made to ensure that the design which uses the Data Element that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package. This check will not be performed for customers who do not use DM Attribute Form.

Document Manager Components in the Configuration Package

The system includes the following components of Document Manager in the Configuration Package (.zip file):

Component	Field / Option
Document Manager	All Folders
Document Manager / Folder	All Permissions which includes users and groups
Document Manager / Folder	All Folder Properties
DM attributes	DM form attributes will get copied over.

Updating Shells - Space Manager Node, Levels Sheet

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Space Manager**, and then select **Levels Sheet**.

The Levels Sheet, in Space Manager, provides a sheet view of all the floors and associated spaces for a given Project/Shell. Tagged Levels Sheet in a tagged Shell template will be included in the Configuration Package.

Conditions for Creating a Levels Sheet Setup Configuration Package

The first time that you package the Setup information, the level design must also be included in the package.

This means that the design must be included in the configuration package. If this check fails, the package creation will result in an error.

For subsequent exports, check will be made to ensure that the Data Element used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

For Levels Sheet, no checks for inclusion of Configuration setup will be done either at the time of packaging the setup for Configuration Package or at the time of importing the setup in a destination environment. At the time of import, the setup information is brought over regardless of the Configuration status (Active/Inactive) of the design object. However, as a best practice, it is recommended that any time the configuration of design object has changed it must be included in the Configuration Package.

Levels Sheet Components in the Configuration Package

The system includes the following components of Levels Sheet in the Configuration Package (.zip file):

Component	Field / Option
Levels Sheet Properties	Name
Levels Sheet Properties	Description
Levels Sheet / Columns	All columns. Columns in Levels sheet are the Data Elements from the Levels. Check has to be made to ensure that the latest deployed version of Level design has also been included in the Configuration Package.
Levels Sheet / Columns	Group columns names

Updating Shells - Space Manager Node, Stack Plans

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Space Manager**, and then select **Stack Plans**.

The Stack Plan, which is a two-dimensional graphical display of facility or building data derived from Space records for levels, can be setup in a Shell template. The Stack Plans in a shell template will be included in the Configuration Package.

You can select multiple items to include in the Configuration Package.

Conditions for Creating a Stack Plans setup Configuration Package

The first time that you package the Stack plan Setup information, the level and Space designs used in the setup must also be included in the package. This means that the designs must be included in the Configuration Package. If this check fails, the package creation will result in an error. For subsequent exports, check will be made to ensure that the design which uses the Data Element that is specifically used in the setup is present in the Published package. If this condition is met, the package creation will be successful. If not, the latest design will have to be included in the package.

Configuration Information:

For Stack Plans, no checks for inclusion of Configuration setup will be done either at the time of packaging the setup for Configuration Package or at the time of importing the setup in a destination environment. At the time of import, the setup information is brought over regardless of the Configuration status (Active/Inactive) of the design object. However, as a best practice, it is recommended that any time the configuration of design object has changed it must be included in the Configuration Package.

Stack Plans Components in the Configuration Package

The system includes the following components of Stack Plans in the Configuration Package (.zip file):

Component	Field / Option
Stack Plan Properties / General	Name
Stack Plan Properties / General	Description
Stack Plan Properties / General	Include levels option
Stack Plan Properties / Options	Space Type. Space type is a required field in Stack Plans. The latest deployed version of the associated Space type must also be part of the Configuration Package.

Updating Shells - Schedule Manager Node, Schedule Sheets

If you have access to the Schedule Manager feature, which was deprecated starting with version 23.5, you can include the selected Schedule Sheets for the selected Shell template in the Configuration Package.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.

Conditions for Updating a Schedule Sheets Setup Configuration Package

The first time that you packaged the Setup information, the Schedule Attribute and the Resource Assignment attribute designs must have been included in the package. Because the Schedule Manager and the corresponding attribute forms and sheets are deprecated, you cannot add new designs. You can only update existing ones.

Schedule Sheets Components in the Configuration Package

The system includes the following components of Schedule Sheets in the Configuration Package (.zip file):

Component	Field / Option
Schedule Sheet Properties/ General	All fields. Custom calendars should also be included in the Package.
Schedule Sheet Properties / Gantt Chart	All fields
Schedule Sheet Properties / Tracking Gantt	All fields
Schedule Sheet Properties / Options	All fields
Schedule Sheet Properties / Schedule	All fields
Schedule Sheet / Activities	No activity related information will be packaged, meaning no rows will be included.
<Schedule Sheet Name> / Scope Management Setup (Applicable for shell templates)	No Scope setup will be brought over since the scope is tied to an activity.
Schedule Sheet / Data Mapping	All fields. Dependency checks for inclusion of Schedule Attribute and Resource Assignment forms will be performed to see if the relevant designs are part of the package.
Schedule Sheet / Budget and Progress Setup	All applicable options
Schedule Sheet / Column	All columns defined in the sheet. If column definition is based on Cost Sheet definition, the Cost Sheet must also be included in the configuration package. If cost sheet column does not exist, an error will be displayed.

Updating Shells - Activity Manager Node, Activity Sheet

You can add an Activity Sheet to multiple shells at once with an Activity Sheet template. For example, you might want to assign newly defined global views to the project/shell so that they are available to all users. For more information, see [Defining Activity Sheet and System Activity Sheet Views for Inclusion in Templates](#).

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

To add an Activity Sheet to a shell using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a shell template.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select an item; from the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells:** Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells:** Use this option to update all shells of that shell type.
 - **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected active and on-hold shells. There is no undo for the update. If you proceed with the update, the following changes will be made:

- If the Activity Sheet with the same name does not exist, it will be added.
 - If the Activity Sheet exists with the same name, it will not be updated or replaced.
 - Assigned WBS attributes to the Activities will be added to the Project WBS Sheet.
 - If Project WBS Sheet does not exist, it will be added.
 - Assigned OBS attributes to the WBS will be added to the OBS Sheet.
 - If OBS Sheet does not exist, it will be added.
 - Sheet permissions will be added
 - Users and Groups will be added if they do not exist.
 - If Group is created, it will be empty.
 - Custom calendars assigned to Activity Sheet will be added.
6. To proceed with the update, select **Yes**.

Note

The views that have been defined in the Activity Sheets templates will not be carried over to the Activity Sheet in the shell.

Configuration Packages

The Activity Manager sub-node, in the configuration package component list, lists all the Activity and WBS Sheet templates defined in the shell templates. You can select one or more Activity Sheets, Project WBS Sheet, and OBS Sheet per shell template that needs to be exported in a package.

If you select Activity Sheet and the attribute form design is not selected, the following error is displayed upon error check in the component list or when creating a component package:

- The design manual Activity attributes is missing in the component list.

Similarly, when you select an Activity Sheet but have not selected the associated WBS Sheet in the component list, the following error will appear upon error check in the component list. When creating a configuration package make sure along with the Activity Sheet template, the associated WBS Sheet template is also a part of the component list.

- The OBS Name from the OBS Sheet <Sheet name> included in the WBS Sheet <WBS Sheet Name> in <Shell Template Name> shell template is missing in the component list.

When the WBS Sheet in shell templates is selected in the component list, but not the design, the following error is displayed:

- The design WBS Sheet attributes is missing in the component list.

When the WBS sheet is selected, but not the OBS Sheet, the following error is displayed. The same error will appear in the configuration package creation if the associated OBS Sheet is not selected:

- The OBS Name from the OBS Sheet <Sheet name> included in the WBS Sheet <WBS Sheet Name> in <Shell Template Name> shell template is missing in the component list.

When the OBS Sheet is selected in the component list but not the OBS attribute design, the following error is displayed:

- The design OBS Sheet attributes is missing in the component list.

There will be no error check for the Cost Codes while creating the package.

Add-on Configuration Packages

You can create configuration packages based on the component lists having activity sheet templates, along with WBS Sheet and OBS Sheet templates and be able to import the package in the destination environment. The above validations mentioned in the Component Lists will apply when creating a package if the associated WBS Sheet or OBS Sheet template or design is not selected in the add on component list.

Import Package

When a user imports the configuration package that has shell templates with Activity/WBS/OBS Sheets, all the following components should be added in the destination.

- Activity Sheets along with activities, activity attributes, dependencies, assigned WBS Codes, assigned CBS codes (if cost sheet is selected in package or cost sheet exists in destination with same CBS code structure)
- Project WBS Sheet with all WBS attributes.
- OBS Sheet with all OBS attributes.
- Cost Sheet with all Cost codes (if selected in Package).

Note

If the Cost Sheet is not included in the Activity Sheet that is included in the Configuration Package, the Activity Sheet will not have the cost codes when the import is completed.

Updating Shells - Access Control Node

You can edit access control parameters and update across shells.

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Modules are identified by name.
- If the module exists in the shell, the module is updated, users/groups are created or updated, and permissions are updated for the module.
- If the module does not exist, the module is added to the shell. Users/groups are created and permissions are created for that module.

To update access control using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the shell template, navigate to **Access Control** and assign user or group permissions to the modules as needed.
5. From the toolbar, select **Update Shells**. The Update Shells window opens, displaying the list of modules for which the access control settings can be updated.
6. Select the module(s) that you want to update.
7. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

8. To proceed with the update, select **Yes**.

Updating Cost Sheet Columns in a Shell

Cost sheet columns can be updated in CBS code-based shells.

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Shell History window shows the complete date.

Note

- A column is identified by a unique data source.
- If the cost sheet does not exist in the shell, the column is not added.
- If the shell cost sheet is present but the column does not exist, the column definition is created, and the column is added. Column restrictions are added. Users/Groups are created or updated.
- For formula columns, the system adds the columns or data sources to the destination cost sheet if they do not exist. If column formulas contain data sources that are not other explicit columns and thus not visible, these data sources are applied in the same manner and remain hidden in the destination. Formula-based columns that are based on BPs are not automatically updated if you change the name of the BP. To update the hover label, you can use the **Update Shells** feature. You can also right-click the column name, select **Properties**, click **Select** in the **Formula** section, and make the applicable changes.
- Any new column that is created will use the column to its immediate left as the reference point for positioning. When a column is added to the cost sheet via an update, this means: If the column to the left of the column that is being pushed exists in both the template and cost sheet, the column is positioned in the cost sheet according to its position in the template. If the column to the left of the column being pushed exists in the template but does not exist in the cost sheet, the column is added to the end (far right) in the cost sheet.

Cost Column Shell Updating Rules

If a cost sheet column of the same name exists, it is replaced according to the following matrix.

If this template (source):	Is used for this shell (destination):	The template will:
Single Date Source	Column exists	Update the column
	Column does not exist	Create column with the same definition
Logical Data source (Formula entry)	Logical Data source Column Exists (Formula entry)	Update and replace the formula
	Logical Data source column exists (Manual entry)	Not update the column or formula
	Column does not exist	Create column with same definition
Logical Data source (Manual entry)	Logical Data source Column Exists (Manual entry)	Update the column
	Logical Data source Column Exists (Formula entry)	Update the column and change it to manual entry
	Column does not exist	Create column with same definition

To add or update cost sheet columns using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the template that you want to update.

4. In the left Navigator, select **Cost Manager**, select **Cost Sheet**, and open the **Cost Sheet** template.
5. From the toolbar, select **Menu Options**, select **Columns**, and then select **Manage Columns**.
The Cost Sheet Columns window opens.
6. If applicable, drag and drop the listed columns to the order that you want to use.
7. Select the column, or columns that you want to use in the update.
8. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells:** Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find on Page to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select **Update**.
 - **All Shells:** Use this option to update all shells of that shell type.
 - **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

9. To proceed with the update, select **Yes**.

Updating Cost Sheet Snapshots in a Shell

After a snapshot schedule is created, you can use the Update Shells option to push the schedule to the selected shells. Changes made to the schedule after it is saved must be saved again before it can be pushed to the selected shells.

To add or update snapshots using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the template that you want to update.
4. In the left Navigator, select **Cost Manager**, select **Cost Sheet**, and open the **Cost Sheet** template.
5. From the toolbar, select **Menu Options**, select **Snapshots**, and then select **Enable Auto Snapshot**.
6. In the **Schedule Snapshot** dialog box, select the **Enable Auto Snapshot** checkbox.
By default, **Update Shells** is disabled until you create a snapshot schedule.
7. From the **Select Snapshot Frequency** list, select the applicable option and then complete the corresponding steps.
 - If you select **Weekly**, select the day of the week.
 - If you select **Monthly**, select:
 - **Day**, and specify a date from 1 through 31. For months that have fewer than 31 days, the system automatically adjusts the schedule depending on the month.
 - **The**, and select First, Second, Third, or Fourth, and then select the day of the week.
 - If you select **Quarterly**, specify a Day from 1 through 90. Quarters are based on the calendar year.

- If you select **Yearly**, specify a Day from 1 through 365.
- 8. In the **Range of Occurrence** section, specify the **Start Date** (required) and **End Date** (optional).
- 9. If you want the system to update the Prior Forecast column in the sheet after each snapshot, select the **Update Prior Forecasts** checkbox.
- 10. To create the scheduled snapshot, select **Save**.
- 11. At the top of the **Schedule Snapshot** dialog box, select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find on Page to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select **Update**.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

- 12. To proceed with the update, select **Yes**.

Update Schedule of Values Structure

You can update the SOV structure for general spends or payment applications in CBS code-based shells.

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Update Shell can be used to create or update the SOV structure. If the structure exists, it will be updated. If not, it will be created (restrictions apply for payment applications; see below).
- When creating or updating the structure of Payment Applications SOV and Summary Payment Applications SOV, the Payment Application Business Process must be set up in the target shell first. If the business process has an active setup, Update Shell will create or update the structure.

To update SOV structure using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]** to update.
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select one of these options: **General Spends**, **Payment Applications**, or **Summary Payment Applications (Contracts with summary - SOV)**.
4. From the toolbar, select **Update Shells**, and select one of the following:

- **Shells:** Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed in uDesigner. When you have isolated the shells to update, select the Update button and select either Selected Shell(s) or All Filtered Shells.
- **All Shells:** Use this option to update all shells of that shell type.
- **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

5. To proceed with the update, select **Yes**.

Updating Shells - Reports Node

You can add and update user-defined reports.

The Update Shell process runs in the background. Depending on the number of records and shells you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Important information about updating reports in Project/Shell:

- Reports are identified by the combination of Name and Data Type.
- Report names do not have to be unique.
- If the report name and data type does not exist, the new one will be added.
- The original owner of the report is added to the Users or Groups of the report in the receiving Project/Shell (Permission tab).
- The administrator of the receiving Project/Shell becomes the report owner.
- If a report exists with the same name and data type in the receiving Project/Shell, the existing report will be replaced with the new report, and the following information will be according to the new report:
 - Report updates
 - Added or changed Users or groups
 - Added or changed permissions

To add or update user-defined reports using Update Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **Reports**, and then select **User-Defined**.
5. Add a UDR to the shell type template, or select UDR to edit. Define properties.
6. Select one or more reports from the User-Defined Reports log.
7. Select **Update Shells**, and choose one of the following:
 - **Shells:** Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was

designed. When you have isolated the shells to update, select **Update**, and select either **Selected Shell(s)** or **All Filtered Shells**.

- **All Shells:** Use this option to update all shells of that shell type.
- **History:** Use this option to view the update history from past updates or cancel a request before the update begins.
An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

8. To proceed with the update, select **Yes**.

Update Commitment Funding Structure

You can update the structure used to create commitment funding sheets in CBS code-based shells.

The Update Shells process runs in the background. Depending on the number of records and projects you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Update Project can be used to create or update the commitment funding structure in the project. If the structure exists, it will be updated. If not, it will be created.
- Updating the structure in a project will not affect existing commitment funding sheets. New sheets will reflect the updated structure.

To update commitment funding structure using Update Shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Funding**, and then select **Commitment Funding Sheet**.
4. From the toolbar, select **Update Shells**, and choose one of the following:
 - **Shells:** Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select **Update**, and select either **Selected Shell(s)** or **All Filtered Shells**.
 - **All Shells:** Use this option to update all shells of that shell type.
 - **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

5. To proceed with the update, select **Yes**.

Update Cash Flow Properties and Permissions

You can push cash flow detail curve properties and permissions from a shell template to a shell. This is available for CBS-code based shells and templates.

The Update Shell process runs in the background. Depending on the number of records and projects you are updating, it can take a considerable amount of time to complete. The process is complete when the End Date column in the Update History window shows the complete date.

Note

- Both detail curve properties and permissions are pushed from the template to the project.
- Cash flow detail curves are identified by name.
- If a detail curve with the same name exists in the project, it will be replaced. All properties, including detail level and time scale, and permission settings will be updated.
- If a detail curve with the same name does not exist in the project, a new one will be created.
- Users and groups will be added if they do not exist. If a group is created, it will be empty.
- To push a curve, the destination project must have a cost sheet.
- Commitment detail level curves will not be pushed.
- A Summary CBS curve cannot be pushed to a project where the cost sheet is flat.
- After a successful update, the updated destination curves will be refreshed.

To update cash flow curve properties and permissions using Update Shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**.
5. Add a cash flow curve to the shell template, or select one to edit, and define the properties. You can define views for each cash flow detail level to include in the shell. You can also select one view per detail level to function as the default view. For more information, see [Defining Global Cash Flow Views for Inclusion in Templates](#).
6. From the Cash Flow log, select a curve.
7. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the shells to update, select Update, and select either Selected Shell(s) or All Filtered Shells.

- **All Shells:** Use this option to update all shells of that shell type.
- **History:** Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

8. Read the message carefully, and then select **Yes** to proceed with the update.

Update Generic Cost Sheet Columns and Rows

You may have a large number of codes that are used within the Generic Cost Manager. In addition, you may have a large number of shells in your implementation. To update codes and columns in your generic cost manager sheets with a minimal effort, you can push columns in a project/shell template generic cost sheet from the Columns Log to cost sheets.

About updating shell instance dashboards

A cost sheet must exist in the destination shell. Pushing a column from a template will not create a cost sheet that can receive the column.

You can push one column at a time.

If a source column is a single data source and the column does not exist in the destination, the destination column is created with that single data source if it does not exist. (Column A or B in example below)

If a source column is a formula with only a single data source and the column does not exist in the destination, pushing the source column creates that column in the destination cost sheet. (Column C in example below)

If a source column is a formula with columns included in the formula and if all constituent columns contain single data sources, the source column can be pushed. For any columns that do not exist in the destination cost sheet, the formula is changed to a single data source in the formula. (Column D in example below)

If a source column is a formula with constituent columns that include logical data sources, the logical data source must exist in the destination cost sheet. The formula for the logical data source may be different in the destination cost sheet. Any column that contains a single data source will follow the rule above. (Column F in example below)

Column	A	B	C	D	E	F
Column Name	Original Commitment	Change Orders	Pending Commitments	Total Commitments	Trends	Forecast
Data Source	Purchase_Order (Approved)	Change_Orders (Approved)	CM011	CM012	Trends(Open)	CM013
Formula			Purchase_Order (Pending) + Change_Orders (Pending)	Original Commitment + Change Orders		Total Commitments + Trends

To add or update generic cost sheet columns from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.

4. In the left Navigator, select **Configurable Modules**, and then select **Generic Cost Manager**.
5. Select the **Generic Cost Manager Sheet** template, and select **Structure**.
6. In the **Generic Cost Manager Sheet: Structure** window, select **Columns**.
7. In the **Columns Log**, select a cost sheet column.
8. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to select one or more shells to update. When the update window opens, it lists all shells in the project. You can use Find to isolate the shells you want to update. The find window contains data elements from the Find form that were designed in uDesigner. When you have isolated the shells to update, select **Update**.
 - **All Shells**: Use this option to update all shells of that shell type.
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shells. There is no undo for the update.

9. To proceed with the update, select **Yes**.

To update generic cost sheet rows from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template that you want to update.
4. In the left Navigator, select **Configurable Modules**, and then select **Generic Cost Manager**.
5. Select the template, and select **Structure**.
6. Select a row or rows to push to the project/shell-level generic cost sheet. You can select multiple rows by holding down the Shift or Ctrl keys as you select the rows. The application will update leaf-level rows, but not summary rows.
7. Select **Update Shells**, and choose one of the following:
 - **Shells**: Use this option to choose which shell(s) to update. You can use Find to search for specific shells to select from the complete list of shells. You can select as many shells as you want to update. The Page and Display fields display on the Shell Update window, but are disabled in this case.
 - **All Shells**: Use this option to update all active and on-hold shells
 - **History**: Use this option to view the update history from past updates or cancel a request before the update begins.

An Alert window opens, detailing the information that will be updated. Read the message carefully, as this action cannot be undone after a shell is updated.

8. To proceed with the update, select **Yes**.

View Update history

You can view details about previously updated shell modules.

To view Update Shell History:

1. In the shell type template, navigate to the module to view the update history.
2. From the toolbar, select **Update Shells**, and choose **History**. The Update Projects/Shells: History window opens. It lists any previous incidents of using Update Shells.
3. Select an instance from the list, and select **Open**. The History Details window opens, detailing the module information that was updated. History Details displays:
 - Requestor: User who initiated the update process
 - Shells: Either user-selected or all shells
 - Submitted date: When the update request was submitted
 - Start date: When the update process started
 - End date: When the update process ended

Cancel a Shell Update Request

You can cancel an update request that has not yet started; that is, any request that does not have a status of **In Process** or **Finished**.

To cancel a shell update request:

1. In the shell type template, navigate to the module in which you want to cancel the update request.
2. From the toolbar, select **Update Shells**, and select **History**. The Update Projects/Shells: History window opens.
3. Select an update that has not yet started.
4. From the toolbar, select **Cancel Request**.

Updating Shell Templates

You (the Administrator) can create or update Shell Template components from another Shell Template.

Within a shell template, you can use the **Update Shell Templates** (toolbar option) and push the shell template data from source shell template to destination shell template or shell templates of the same shell type for the modules described in the following topics.

Access Control

For specific modules, you can update the **Access Control** information in the destination shell templates from a source shell template. To do so, use the **Update Shell Templates** toolbar option. After the update completes successfully, all the selected destination shell templates will have the **Access Control** information updated.

The modules that do not exist in the destination shell template will get added.

Also, **Groups** or **Users** associated with the modules are added. The modules that exist in the destination shell template will have the **Access Control** information replaced. In this case, new **Groups** or **Users** that do not exist in the destination shell template will get added.

To access and work with the **Update Shell Templates** toolbar option:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Access Control** to open the **Access Control** window.
5. From the toolbar, select **Update Shell Templates**.
6. From the **Update Shell Templates** window select as many records (modules, BPs, and so on) as you need, select the **Update** drop-down list, and select the **Shell Templates** menu item to open the **Select Shell Templates** pop-up window.
7. From the **Projects** list (**Projects - Current View: All**), select the projects that you want to update, and select **Update**.
8. When the **Confirmation** appears, select **Yes** to update the selected shell templates.
9. When the **Update Shell Templates** window appears, close the window to return to the **Access Control** window.

In the **Update Shell Templates** window, when you select as many records (modules, BPs, and so on) as you need and select the **Update** drop-down list, the following menu items are available:

- **Shell Templates**
- **All other Shell Templates**
- **History**

The **Shell Templates** menu item is explained above.

All other Shell Templates

If you select the **All other Shell Templates** menu item, select **Yes** to update all the shell templates when the **Confirmation** message appears. When you select **Yes**, the selected modules **Access Control** information (permissions) are sent (pushed) to all the other shell templates of same shell type, excluding the current source shell template.

History

If you select the **History** menu item, the **Update Shell Templates: History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

In the case of **Access Control information**, the history details the actions performed as part of **Access Control** information push to the destination shell templates (all shell templates or the user-selected shell templates).

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

Configuration Package and Access Control

For specific modules, you can send **Access Control** information of a component (or selection of components) into a destination shell template (or a selection of shell templates), from the source shell templates.

- If any of the selected components exists in the destination shell template, the **Access Control** information will be replaced in the destination shell template.
- If any of the selected components do not exist in the destination shell template, the **Access Control** information will be added in the destination shell template.

The associated **Groups** and **Users** will also be added into the destination shell templates.

Business Process and Workflow Setups

For specific modules, you can update the **Business Process Setup** for workflow and non-workflow business processes information in the destination shell templates from a source shell template. For specific modules, you can also update the **Workflow Setup** information in the destination shell templates from a source shell template. To perform either or both steps, you can use the **Update Shell Templates** toolbar option. After the update completes successfully, all the selected destination shell templates will have the business process setup for workflow or non-workflow business processes information updated. The modules that do not exist in the destination shell template will get added.

Business Process Setup

To access and work with the **Update Shell Templates** toolbar option:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Setup**, and then select **Business Process**.
5. In the **Business Processes** log, select a BP and open the record.
6. In the BP record log, select the BP record.
7. From the toolbar, select **Update Shell Templates**, and select one of the following:

- **Shells Templates**

If you select this option, the **Select Shell Templates** window opens, which displays a list of projects that you can select. The projects are listed in the Projects log, and the details of each project are displayed in columns.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.

If you select **Yes**, you will return to the **Update Shell Templates** window. In the Update Shell Templates window, select **Close** to exit.

- **All Other Shell Templates**

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

- **History**

If you select this option, the **Update Shell Templates: History** window opens. This window shows the details of the submitted update requests. In the case of business process setup for workflow and non-workflow business processes, the history details the actions performed as part of information push to the destination shell templates (all shell templates or the user-selected shell templates).

If the job is not successful for specific shell templates, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open** to see the details about that item.

Note

If the **Record Status** defined in the source has been inactivated, an error is displayed that requires selection of an active Record Status to continue.

The following cases explain the results of sending various non-workflow and workflow BP setups to the destination shell templates.

When you select a non-workflow BP setup to send or push to the destination shell template and *the BP setup does not exist* in the destination shell template:

A new BP setup will be added, and the following information (from all the tabs) will be added as part of the business process setup creation. The following tabs information will be added into the destination shell templates, upon successful push from the source shell template.

General tab

All the information in the **General** tab (such as setup name, description, help file, default record status, and so on) will be added.

Any **Groups** or **Users** who are part of the BP setup will be brought over to the current shell template as members.

- If **Groups** or **Users** do not exist in the destination shell template, they will be added as shell template members. This could be both Owner Company or Sponsor Company or Partner Company or Member Company users.
- If **Users** exist in the destination shell template, they will be added to the BP setup. Additionally, the system validates whether the user's company exists. If not, the system adds the Partner Company as a Member Company.

Record Editors tab

All the record editors of the existing BP setup will be added.

The **Groups** or **Users** selected as record editors will be added as members to the destination shell template, if they do not exist.

View Forms tab

All the **View Forms** that are associated with the BP setup will be added.

Record Properties tab

All the record properties associated with the BP setup will be added.

Notifications tab

All the options under the **Notifications** selected will be added in the BP setup that is created in the destination shell template.

Auto creation Setup

All the autocreation settings, including the autocreator, will be added in the BP setup that is created in the destination shell template.

Empty **Groups** will be added, if they do not exist. The permissions related to the BP setup will be added as part of this update or push. The **Last Modified Date** value in the BP setup log will be updated to show the latest updated, or added, date.

When you select a non-workflow BP setup to send or push to the destination shell template and *the BP setup does exist* in the destination shell template:

If the BP setup exists in the destination shell template, the existing BP setup will be replaced.

The tabs information will be replaced with the source shell template BP setup information.

Groups or **Users** who do not exist in the destination shell template will be added as part of the BP setup update or push.

When you select a workflow BP setup to send or push to the destination shell template and *the BP setup does not exist* in the destination shell template:

If the BP setup does not exist in the destination shell template, the BP setup information, tabs information, and autocreation setup information will be replaced.

All the workflows associated to the BP will be added.

The following tabs information will be added into the destination shell templates, upon successful push from the source shell template.

General tab

All the information in the **General** tab (description, help file, default record status, and so on) will be added.

Any **Groups** or **Users** who are part of the BP setup will be brought over to the current shell template as members. Additionally, the system validates whether the user's company exists. If not, the system adds the Partner Company as a Member Company.

Record Editors tab

All the record editors of the existing BP setup will be added.

The **Groups** or **Users** selected as record editors will be added as members to the destination shell template, if they do not exist.

View Forms tab

All the **View Forms** that are associated with the BP setup will be added.

Record Properties tab

All the record properties associated with the BP setup will be added.

Notifications tab

All the options under the **Notifications** selected will be added in the BP setup that is created in the destination shell template.

Auto creation Setup

Only the autocreation settings will be added in the BP setup that is created in the destination shell template.

You must send or push a workflow BP setup separately.

By sending or pushing the BP setup, you can set up changes in other shell templates without the need to bring in the workflow setups.

For any new workflow BP that must be sent or pushed into shell templates, you can select the **Update Shell Templates** option from the workflow setup log. This enables the selected workflow, BP setup information, and autocreation workflow setup to be sent or pushed to the destination shell templates.

When you select workflow BP setup to send or push to the destination shell template and *the BP setup does not exist* in the destination shell template:

If the BP setup exists in the destination shell template, the existing BP setup will be replaced.

The tabs information will be replaced with the source shell template BP setup information.

Groups or **Users** who do not exist in the destination shell template will be added as part of the BP setup update or push. The permissions related to the BP setup will be added as part of this update or push. The **Last Modified Date** value in the BP setup log will be updated to show the latest updated, or added, date.

Workflow Setup

To access and work with the **Update Shell Templates** toolbar option:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Setup**, and then select **Business Process**.
5. In the **Business Processes** log, select and open a BP.
6. In the left Navigator, select the **Workflow Setup** functional node to open the **Workflow Setup** log for the selected BP.
 - a. Modify the workflow settings in the **General**, **Settings**, and **Integration** tabs.

Note

The **Integration** tab displays only if a connection with Oracle Integration is set up and enabled for workflow BPs.

- b. Select **Apply**, and then select **OK**.
7. In the **Setup** log, select the applicable workflow, and from the toolbar, select the **Update Shell Templates** menu, and select any of the following options:
 - **Shells Templates**

If you select this option, the **Select Shell Templates** window opens, which displays a list of projects that you can select. The projects are listed in the Projects log, and the details of each project are displayed in columns.

Select the projects that you want to update, and select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.
 - **All Other Shell Templates**

Select this option if you want to update all shell templates. When the **Confirmation** message appears, select **Yes** to update to all templates.
 - **History**

If you select this option, the **Update Shell Templates: History** window opens. This window shows the details of the submitted update requests. The history details the actions performed as part of information push to the destination shell templates (all shell templates or the user-selected shell templates).

If the job is not successful for specific shell templates, the history lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open** to see the details about that item.

The following cases explain the results of sending various workflow setups to the destination shell templates.

When you select workflow setups to send or push to the destination shell template, along with the BP setup *where the BP does not exist*:

Upon successful completion of the push job, the destination shell template will have the workflow setups along with the BP setup.

New **Groups** or **Users** who are associated with either the workflow setup or the BP setup will be added and permissions related to the BP setup will be copied. Additionally, the system validates whether the user's company exists. If not, the system adds the Partner Company as a Member Company.

The last modified date in the BP setup log will be updated to reflect the newly pushed date.

When you select workflow setups to send or push to the destination shell template, along with the BP setup *where the BP exists*:

In the destination shell template, the BP setup will be replaced with the source shell template BP setup information.

All the existing workflow setups will be replaced with the workflow setups of the source shell template.

New **Groups** or **Users** who are associated with either the workflow setup or the BP setup will be added and permissions related to the BP setup will be copied. Similarly, the existing user's permissions related to the BP setup will be updated. Additionally, the system validates whether the user's company exists. If not, the system adds the Partner Company as a Member Company.

The last modified date in the BP setup log will be updated to reflect the newly pushed date.

Gates

To update the destination shell templates with **Gates** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Setup**, and then select **Gates** to open the **Gates Setup** log.
5. Select an item.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the Projects log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push

job gets initiated and the **History** log will show the job details. The **Gates** setup will be added or replaced in the destination shell template, upon successful completion of the update or push job.

If there are no existing **Gates Setup** in the destination shell template, a new **Gates Setup** will be added, and the information in the **General**, **Settings**, and **Schedule** tabs will be updated.

General tab:

The Setup Name, Description, and Status will be updated based on the source Gates Setup values.

The **Status** value (Active/Inactive) of the destination shell template Gates Setup will be updated with the source.

Settings tab:

All the phases in the **Settings** tab will be updated, and the **Gates Setup** condition elements will be added.

The **Groups** and **Users** associated with the additional **Gates Setup** information will be updated, and they will be added as shell template members if they do not exist. In the case of **Groups**, only the **Groups** names will be added.

The Email content and other additional **Gates Setup** in the **Settings** tab will be updated according to the **Gates Setup** information of the source.

Schedule tab:

The details related to the schedule runs of the **Gates Setup** will be updated with the **Gates Setup** information of the source.

The **Gates Setup** log information (such as **Name**, **Status**, **Last Update Date**, **Creator**, and **Current Phase**) will be updated with the **Gates Setup** information of the source.

The **Last Update Date** value will get updated to the current date and time.

If there are existing **Gates Setup** in the destination shell template and the current status of the setup is **Inactive**, the **Gates Setup** in the destination shell template will be updated, and the status will be updated based on the source **Gates Setup**.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Update Shell Templates: History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Gates Setup** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

Dashboards

To update the destination shell templates with **Dashboards** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Setup**, and then select **Dashboards** to open the **Dashboards** log.
5. Select a dashboard.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Update Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the Projects log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The following definitions from the existing selected **Dashboards** setups will be added or replaced in the destination shell templates:

Setup information (such as **Name**, **Description**, and so on)

The **Last Modified Date** value will be updated to the current date, and the **Creator** will be a logged-in user who adds the dashboard.

All the permissions related to the setup will be added or updated.

The **Groups** and **Users** associated with the additional **Dashboards** setup information will be updated, and they will be added as the shell template members if they currently do not exist.

The following will be copied:

- Filters associated with the **Dashboards** setups.
- Custom, Drill-down, Portlet, Standard, and Analytics blocks, from the source **Dashboards** setups.

The default settings will not change in the destination shell template.

For the existing **Dashboard** setups, the following additional information will be updated:

- New Custom, Drill-down, Portlet, Standard, and Analytics blocks within the tabs will be added or updated. The new tabs will be added to the existing setup.
- All the destination shell templates where the **Dashboards** setups are added or replaced will be listed in the history details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Dashboards** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Rules

To update the destination shell templates with **Rules** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Rules** to open the **Rules** log.
5. Select an item.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The **Rules** setup will be added or replaced in the destination shell templates.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Update Shell Templates: History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Rules** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Cash Flow

To update the destination shell templates with **Cash Flow** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a project.
4. In the left Navigator for the project, select **Cost Manager**, and then select **Cash Flow**. You can define views for each cash flow detail level to include in the templates. You can also select one view per detail level to function as the default view. See [Defining Global Cash Flow Views for Inclusion in Templates](#).
5. In the **Cash Flow** log, select a cash flow.
If you update a shell template to use a Summary CBS Level that is available in the Cost Sheet for a selected destination, the system creates the applicable Cash Flow. Otherwise, the system generates an error.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Update Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the Projects log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.

If you select **Yes**, the push job gets initiated and the **History** log will show the job details.

The **Cash Flow** setup will be added or replaced in the destination shell templates.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Cash Flow** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

In the **History** log:

- If the destination shell template does not have a Cost Sheet defined, and the user tries to add Cash Flow by CBS or Summary CBS curves, the following message will be displayed in history log: "Cost Sheet is not defined."
- If the selected cash flow curve is of the Commitment type and the Commits BP setup does not exist in the destination shell template, the following message will be displayed in history log: "Business Process <BP name> setup does not exist or is in inactive status."
- If the selected cash flow curve has a schedule selected either from Activity Sheet or Schedule Sheet, and the selected Activity Sheet or Schedule Sheet does not exist in the destination shell template, then when the user saves the properties of the selected cash flow curve in the destination shell template the system will display error message.

Cost Sheet Columns

To update the destination shell templates with **Cost Sheet Columns** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Cost Manager**, select **Cost Sheet**, and open the **Project Cost Sheet**.
5. From the toolbar, select **Menu Options**, select **Columns**, and then select **Manage Columns**.
The Cost Sheet Columns window opens.
6. If applicable, drag and drop the list columns to the order that you want to use.
7. Select the column, or columns, that you want to use in the update.
8. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shell Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shell Templates

If you select this option, the **Update Shell Templates** window opens that displays a list of projects that you can select. You can use Search or Find on Page to isolate the shells you want to update. The projects are listed in the Projects log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated, and the **History** log will show the job details.

The **Cost Sheet Columns** setup will be added or replaced in the destination shell templates.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Cost Sheet Columns** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

In the **History** log, if the destination shell template does not have a Cost Sheet defined, the following message will be displayed: Cost Sheet is not defined.

Cost Sheet Snapshots

You can schedule the creation of snapshots on a weekly, monthly, quarterly, or annual basis and push the snapshot schedule to the cost sheets in other shell templates. After a snapshot schedule is created, you can use the Update Shells Template option to push the schedule to the selected templates. Changes made to the schedule after it is saved must be saved again before it can be pushed to the selected templates.

To update the destination shell templates with a Cost Sheet Snapshots setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the template that you want to update.
4. In the left Navigator, select **Cost Manager**, select **Cost Sheet**, and open the **Cost Sheet** template.
5. From the toolbar, select **Menu Options**, select **Snapshots**, and then select **Enable Auto Snapshot**.

6. In the **Schedule Snapshot** dialog box, select the **Enable Auto Snapshot** checkbox. By default, **Update Shells** is disabled until you create a snapshot schedule.
7. From the **Select Snapshot Frequency** list, select the applicable option and then complete the corresponding steps.
 - If you select **Weekly**, select the day of the week.
 - If you select **Monthly**, select:
 - **Day**, and specify a date from 1 through 31. For months that have fewer than 31 days, the system automatically adjusts the schedule depending on the month.
 - **The**, and select First, Second, Third, or Fourth, and then select the day of the week.
 - If you select **Quarterly**, specify a Day from 1 through 90. Quarters are based on the calendar year.
 - If you select **Yearly**, specify a Day from 1 through 365.
8. In the **Range of Occurrence** section, specify the **Start Date** (required) and **End Date** (optional).
9. If you want the system to update the Prior Forecast column in the sheet after each snapshot, select the **Update Prior Forecasts** checkbox. If you do not select the **Enable Auto Snapshot** checkbox or if you clear it later, the **Update Prior Forecasts** checkbox is disabled (dimmed).
10. To create the scheduled snapshot, select **Save**.
11. At the top of the **Schedule Snapshot** dialog box, select **Update Shell Templates**, and choose one of the following:
 - **Shells**: Use this option to select one or more shell templates to update. When the update window opens, it lists all shell templates in the project. You can use Find on Page to isolate the templates that you want to update. The find window contains data elements from the Find form that was designed. When you have isolated the templates to update, select **Update**.
 - **All Shells**: Use this option to update all shell templates of that shell type.
 - **History**: Use this option view the update history from past updates or cancel a request before the update begins.

An Alert window opens letting you know that you are about to push changes to the selected shell templates; there is no undo for the update.
12. To proceed with the update, select **Yes**.

Commitment Funding Sheet

To update the destination shell templates with **Commitment Funding Sheet** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator, select **Cost Manager**, select **Funding**, and select **Commitment Funding Sheet** to open the **Commitment Funding Sheet** log.
5. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**

- **All Other Shell Templates**
- **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.

If you select **Yes**, the push job gets initiated and the **History** log will show the job details.

The **Commitment Funding Sheet** setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Commitment Funding Sheet** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Document Manager

To update the destination shell templates with **Document Manager** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Document Manager**, and then select **Documents** to open the **Documents** log.
The **Documents** log is divided into two panes. The left pane lists the **Project Documents** and the right pane displays the corresponding details for each document.
5. In the left pane of the **Documents** log, select a record.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:

- **Structure & Permissions**
- **Permissions only**
- **History**

You can select to update both the structure and permissions of the documents in the destination shell template or just the permissions.

The following explores each option in detail.

Structure & Permissions

The **Structure & Permissions** option has the following menu items:

- **Shell Templates**
- **All Other Shell Templates**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The applicable document type setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

Permissions only

The **Permissions only** option has the following menu items:

- **Shell Templates**
- **All Other Shell Templates**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.

If you select **Yes**, the push job gets initiated and the **History** log will show the job details.

The applicable document type setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of the **Documents** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

General Spends (SOV Structure)

To update the destination shell templates with **General Spends** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Cost Manager**, select **Schedule of Values**, and then select **General Spends** to open the **Schedule of Values: General Spends** log.
5. Select an item.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The **General Spends** setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of the **General Spends** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Payment Applications (SOV Structure)

To update the destination shell templates with **Payment Applications** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Cost Manager**, select **Schedule of Values**, and then select **Payment Applications** to open the **Schedule of Values: Payment Applications** log.
5. Select an item.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The **Payment Applications** setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of the **Payment Applications** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Summary Payment Applications (SOV Structure)

To update the destination shell templates with **Summary Payment Applications** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. From the **Projects Templates** log, select and open a **project**.
4. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, select **Summary Payment Applications**, and then select the applicable SOV functional sub-node. The **Schedule of Values: Summary Payment Applications** log appears.
5. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**
 - **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The **Commitment Funding Sheet** setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Summary Payment Applications** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Setting Up Shell Templates with Multiple Base Commit BPs with Multiple Payment Applications and SOVs

To accommodate multiple contract types or commitments in a project, you can now include more than one Base Commit BP wherein each Base commit BP is associated with a payment application and a distinct schedule of values (SOV).

Note

With this setup, you are no longer limited to configuring only one Base Commit BP with a payment application and SOV in each project.

You can also watch the video: [Using Multiple Payments in a Single Shell](#)

Prerequisite

You have created one or more Base Commit BPs with payment applications and corresponding SOVs.

Business Process Setup Procedure for Shell Templates

To set up multiple Base Commit BPs with payment applications and corresponding SOVs in shell templates:

1. Select the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and select **Projects**.
3. In the **Project Templates** log on the right pane, select a project/shell template.
4. In the left Navigator of the selected project/shell template, select **Setup**, and select **Business Process**.
 - a. In the **Business Process Setup - Current View** log, select **New**.
 - b. In the **New Business Processes** window, select a Base Commit BP with payment applications.
 - c. Select **OK** to include the Base Commit BP in the **Business Process Setup - Current View** log.

- d. Repeat the above step sequence to add multiple Base Commit BPs.
 - e. Select **OK** to confirm the alert message that displays when you add subsequent Base Commit BPs in the project/shell template.
- With this setup, the **Schedule of Values** log is relocated in the left Navigator. Contact your Company Administrator if you do not have access to the new SOV log location.
5. To set up a workflow for each Base Commit BP added in the **Business Process Setup - Current View** log:
 - a. In the left Navigator, select **Setup**, select **Business Process**, select **[Base Commit BP Name]**, and select **Workflow Setup**.
 - b. In the **<BP Name> Setup - Current View** log, add or modify the workflow of the Base Commit BP.
 6. To verify that a Schedule of Values (SOV) is created for each Base Commit BP in the project/shell template:
 - a. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and select **Payment Applications**.
 - b. Confirm you can view the new Schedule of Values node created for each Base Commit BP.
 - c. Proceed to create a SOV structure for each Schedule of Values node. For more information, see [Payment Applications \(SOV Structure\)](#).
 7. To update the above modifications from shell templates in individual shells, see [Update Schedule of Values Structure](#).
 8. To grant users with permissions to access and use multiple Base Commit BPs:
 - a. If **User Mode Navigator** is *not* defined:
 - i. In the left Navigator, select **Access Control** node in the selected shell template.
 - ii. In the right pane, select **User Mode Access**, select **Financial Analysis**, select **Schedule of Values**, and select **Payment Applications** (a new node listing multiple Base Commit SOVs)
For example, the following nodes display in **Access Control** by default:

Schedule of Values, followed by **Payment Applications**

Schedule of Values, followed by **Payment Applications**, followed by **[Base commit BP Name]**, followed by **- SOV**
 - b. If **User Mode Navigator** is defined:
 - i. In the left Navigator, select the **Access control** node in the selected shell template.
 - ii. In the right pane, select **User Mode Access**, and select **[select the custom-defined node containing the multiple Base Commit SOVs]**.
For example, the following nodes display in **Access Control** by default:

Schedule of Values, followed by **Payment Applications**

User Mode Navigator for project/shell displays **[Base commit BP Name] - SOV**
 - c. In the **Access Control** log on the right pane, select **Schedule of Values**, and select **Payment applications**.
 - d. Select each SOV node and set up permissions and user access. For more information, see [Updating Shells - Access Control Node](#).

Note

It is recommended to delete user groups that will no longer be used if all users have been given access to multiple Base Commit BPs.

9. Create and import a configuration package to include multiple Base Commit BPs with the associated BP setups, shell templates, shells, SOV structures, and change commits.

For more information, see [Creating Configuration Packages](#).

Configuring Oracle Integration for P6 System Activity Sheets in Shell Templates

Company Administrators and Shell Administrators can configure single shell templates of CBS type to use Oracle Integration as the default integration engine.

Benefits

- Streamlines configuration when new projects are created.
- Enforces organizational integration strategy (Oracle Integration-first or mixed).

Limitations

Updates affect new single shells only. Existing shells are unaffected.

Prerequisites

- Oracle Integration is enabled at the company level as the integration engine as outlined in the Initial Oracle Integration Setup.
- You have the required permissions to edit shell templates and set up P6 schedule integrations as an administrator.
- Existing Primavera Gateway integrations will be removed when switching to Oracle Integration. Be aware of business and technical impacts.

Procedure

To set up Oracle Integration as the default integration engine of choice in single shell templates of CBS shell type for P6 System Activity Sheets:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then navigate to select the relevant single shell.
3. In the **<Shell_Name> Templates** log (right pane), select the applicable template and then select **Open** from the gear menu.
4. On the Shell's landing page, from the **My Dashboard** menu, select **Details**, and then select the **Integration** tab.

The **Integration** tab displays only those projects that are configured to use Oracle Integration as the default integration engine.

5. If you choose to migrate one or more projects that are already configured with Primavera Gateway integration, they will be migrated to use Oracle Integration by default when you select the **Integration** tab. A confirmation dialog displays indicating these projects will be migrated to use Oracle Integration as the default integration engine.

- Select **Yes** to migrate projects to use Oracle Integration. The projects listed in the **Gateway Integration** tab are relocated to the **Integration** tab.
 - Select **No** to retain projects configured with Primavera Gateway integration.
6. To configure additional projects (in the same shell) with Oracle Integration in the **Integration** tab:
 - a. (Optional) a. From the **Add** menu, select **P6 Schedule** from the following options:
 - **Primavera Cloud Cash Flow**
 - **Primavera Cloud Schedule**
 - **P6 Schedule**

Note

For each *shell*, you can select only one source for schedule in the **Integration** tab: **Primavera Cloud Schedule** or **P6 Schedule**.

- b. Enter the following project details:
 - i. **Project ID:** Enter the unique alphanumeric project ID available in this shell.
 - ii. **Project Name:** Displays the project name associated with the Project ID.
 - iii. **Primavera Cloud Workspace ID:** Displays the Workspace ID in Primavera Cloud only if you chose **Primavera Cloud Schedule** or **Primavera Cloud Cash Flow**. This field is not applicable if you chose **P6 Schedule** (step 6a).
 - iv. **Integration Type:** Displays the integration source you selected from the **Add** menu (step 6a).
7. Repeat the previous step to set up multiple projects with Oracle Integration for P6 System Activity Sheets in this shell.
8. To save the changes in the template, select **Save**. When new projects are created from this single shell template, they inherit the default engine.
9. If required, update the Dashboards of other single shell templates with Oracle Integration as the default integration engine as outlined in [Updating Shells - Setup Node, Dashboards](#)
10. Advise project administrators to check and update inherited settings as needed.

Reports (User-Defined Reports)

To update the destination shell templates with **Reports** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a **project**.
4. In the left Navigator for the project, select **Reports**, and then select **User-Defined** to open the **User-Defined Reports** log.
5. In the log, select the needed reports.
6. From the toolbar, and **Update Shell Templates** and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**

- **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Select Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the **Projects** log, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates. The push job gets initiated and the **History** log will show the job details.

The **User-Defined Reports** setup will be added or replaced in the destination shell templates.

The **History** log will show the job details.

All Other Shell Templates

If you select this option, when the **Confirmation** message appears, select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Shell Template History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of the **User-Defined Reports** setup push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Activity Sheets

You can update the Activity Sheets that are used in destination shell templates. If applicable, any views that you defined are also included in the update (for more information, see [Defining Activity Sheet and System Activity Sheet Views for Inclusion in Templates](#)).

To update the destination shell templates with **Activity Sheets** setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a template.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select an item.
6. From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**
 - **All Other Shell Templates**

- **History**

The following explores each option in detail.

Shells Templates

If you select this option, the **Update Shell Templates** window opens that displays a list of projects that you can select. The projects are listed in the window, and the details of each project are displayed in columns such as Project Number, Project Name, Status, and so on.

Select the projects that you want to update. From the toolbar, select **Update**. When the **Confirmation** message appears, select **Yes** to update the selected shell templates.

If you select **Yes**, the push job gets initiated and the **History** log will show the job details.

The **Activity Sheets** setup will be added or replaced in the destination shell templates.

All Other Shell Templates

If you select this option, review the message that is displayed in the **Confirmation** message, and select **Yes** to update all the shell templates.

History

If you select the **History** menu item, the **Update Shell Templates: History** window opens. This window shows the details—such as Requestor, Shell Templates, Submit Date, and so on—of the submitted update requests.

The **History** log provides details of each job by showing the actions performed as a part of **Activity Sheet** push to the destination shell templates.

In the case where in certain shell templates the job is not successful, the history details lists the shell templates where the update has failed and displays the reason for the failure.

You can select an item in the list and select **Open**, from the toolbar, to see the details about that item.

You can select the **Cancel Request** option, from the toolbar, if the request is not in progress or has not been completed.

Activity Sheets Set Up with Oracle Integration in Shell Templates

If your company administrator has configured Unifier with Oracle Integration as the default integration engine, you can set up system and manual activity sheets to use Oracle Integration in project/shell templates to get and send schedule data.

Prerequisites

- Oracle Integration is enabled as the default integration engine in the Company Workspace.
- You have the required permissions to set up activity sheets in projects/shells.

Procedure

To update the destination shell templates that use system and manual activity sheets to get and send data by using Oracle Integration as the default integration engine:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open a shell template.
4. In the left Navigator, select **Setup**, and then select **Activity Sheets**.

5. For each activity sheet in the **Name** column, select an integration recipe from the **Integration** drop-down list to get or send data, and then select **Save**.
6. To update the activity sheets integration method in multiple shell templates or shells with the above selections:
 - From the toolbar, select **Update Shell Templates**, and select one of the following:
 - **Shells Templates**: Select this option to update shell templates associated with other projects.
 - **All Other Shell Templates**: Select this option to update all other shell templates that were not selected in the previous option.
 - **History**: Select this option to update the history of the shell templates in sync with the changes being made.
7. Select relevant projects whose shell templates or shells are to be updated, and then select **Update**.
8. In the confirmation dialog box, select **Yes** to confirm the above selections.

The activity sheets set up with Oracle Integration are added or replaced in the destination shell templates.

Defining Activity Sheet and System Activity Sheet Views for Inclusion in Templates

You can define multiple global views for multiple activity sheets and one system activity sheet and link them to all or specific projects/shells so that they are listed in the **View** menu. This improves the ability of users on the same project and different projects to view information in a similar way even for different configurations. You can also define one of the views for activity sheet as the default.

You can update these views at any time and link them to all or specific projects/shells as the need arises. While these global views cannot be changed by the users, they can use them as the basis for creating their own views.

To define a view for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select and open the applicable template.

Note

To create a view for the system activity sheet, you are allowed to create one template and define views for it. If the system activity sheet has not been created yet, from the toolbar, select **Create**, and select **System Activity Sheet**.

6. From the **View** menu, select **Create New View**.
7. In the **Save View As** field of the **New View** window, enter a name for the new view.
8. Use the various tabs for adding columns and filtering, grouping, and sorting information.

9. Use the **Columns** tab to select the columns that you want displayed in the view. The **Available Columns** box displays all the columns that you might want to include. The **Selected Columns** box displays all the columns that you select. You can move columns in and out of the **Selected Columns** box.

Use the following fields to set the position of the new view:

- **Left Lock after Column:** Displays a list of all columns, except the last column from the selected columns list. By default, **None** is selected, which means that you have chosen no column to be locked, from the left side of the sheet.
- **Right Lock after Column:** The default value is **None**, which means that you can select not to right-lock the column in the view. Other values in this field are based on the value that you have selected in the **Left Lock after Column**.

In addition to the previous sections, there are three options located after the **Selected Columns** section: **Group Management**, **Group Selected Columns**, and **Delete Group**.

10. Use the **Filters** tab to control what information is displayed in the selected view.
11. Use the **Group By** and **Sort By** tabs to identify which columns should be used for group and sorting and in what order.
12. When you are done, select **Save**.

Setting Default Activity Sheet Views for Templates

After you have defined templates, you can specify one of the templates as the default for managing views.

To specify a default template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select the applicable template, select the *gear menu* (⚙️), and select **Mark as Default**.
The **Default** column displays **Yes** for the applicable template.

If another template was currently set as the default, the system removes the label from the **Default** column for that template.

To remove a default label:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select the applicable template, select the *gear menu* (⚙️), and select **Reset Default**.

Managing Activity Sheet Views for Templates

All shared views in a template that are set to Visible are displayed to those who have the applicable permissions when they access a sheet that uses the template. If you update, hide (clear the Visible checkbox), or delete a view, these changes are automatically applied to the corresponding sheet.

To update a view for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Activity Manager**, and then select **Activity Sheet**.
5. In the **Activity Sheets** log, select and open the applicable template.
6. From the **View** menu, select **Manage Views**.
7. Use the **Manage Views** dialog box to:
 - Change the order of the views in the **View** menu for the projects/shells.
 - Make a view visible or hide it.
 - Delete a view.

The current Active View is marked with a green check mark.

8. To save your changes, select **Save**.

Setting Up View Forms in Shell Attributes

The shell details page (**Details**) displays the **View Forms** tab. To access the shell details page:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the upper-right corner, select **My Dashboard** () , and then select **Details**.

The **View Forms** tab is available in all shell types (single shell or multiple instance shell) details page, when there are View forms defined and deployed for that shell type.

The **View Forms** tab is not available:

- If the design does not have a View form.
- For shell designs deployed prior to this upgrade.

In the **View Forms** tab, select **+ Add View Form** to add the View forms (from a list of forms displayed in the **Select View Forms** window) that are associated with the shell. You, the administrator, can select multiple View forms to add. After adding the View forms, you can remove or change the forms sequence. You can use the *gear menu* () to remove multiple View forms.

After you add the View forms and select **Add**, the system opens the **User and Group Picker** window which displays all active users or groups that are associated with the Shell. Multiple users and groups can be added to the viewers list.

Select **Done** when finished. The Details page will split in two and the right side displays the **Permissions Settings** block along with the **Add Viewers** field.

If you assign users and groups to a View form, the assigned users and groups can only see the **General** tab of the form.

If the users or groups have permission to view multiple View forms, they will see the View forms based on the sequence listed in the Details window, under the **Form Name** block.

Select **Done** when finished.

If a user or group has access to multiple View forms, the user or group will see the first View form that they have access to, based on the sequence of the View forms listed.

For example, if user 'U1' has access to both View Forms VF01 and VF02 both, when U1 views the General tab of the shell details, the VF01 is displayed if the VF01 is the first View form in the sequence order of forms displayed.

Dedicated Mailbox for Shells

External emails are important communications that need to be included in shells. Such emails can come from project team members or from External Users who do not use Unifier. These email communications (and any attachments) can be collected in a central repository for the shell, called a **Mailbox**. After such emails reside in the shell's Mailbox, users can view them, forward them to appropriate members, flag them for review, and reply to them. In addition, these external emails can be linked to business process records.

Note

External emails that have been blind carbon-copied (Bcc) are not collected by the Mailbox.

When Unifier is installed on your system, a dedicated email address for your company is specified, and whenever a shell is created, Unifier assigns it a unique identifier. Unifier combines this email address and shell identifier to create the shell's Mailbox.

Note

To prevent spam and virus attacks, you will need to create a list of approved email addresses that will be accepted by the shell. For more information, see [Creating and Maintaining an Approved Email List for Project or Shell Mailboxes](#).

When you create a shell, you can notify all shell participants, both within and outside of Unifier, of the shell's email address. For more information, see [Create a Shell Manually](#).

Updating the Email Address for a Project or Shell

After the system is installed, a dedicated email address is specified for the company. When a project or shell is created, the system assigns a unique identifier to it. The system combines the dedicated email address and the shell identifier and creates the Project Mailbox. The shell email address appears on the **Options** tab of the shell Details page.

The Project or Shell Administrator can define the project email address to create a more meaningful name that is related to the project.

The existing format for an email address in Prefix pattern is: <PID>-<Configurator email>@<Domain>.

The existing format for an email address in Suffix pattern is: <Configurator email>@<Domain>+<PID>@<Domain>.

The string that you enter in the Email Address field is prefixed/suffixed to the project email address based on the **Unifier Configurator** settings. By default, the system generates the "<PID>" and places it as the first part of the project email address.

You can change the project email address at any time; however, the system retains the emails belonging to a previous mailbox of the shell in the new mailbox.

The following explains the rules for naming an email address:

- Must be alphanumeric.
- Can include non-ISO characters.
- Cannot contain more than 170 characters.
- Cannot include the at (@), plus (+), or dash (-), symbols.

The following characters are not acceptable for the <PID>: / \ () ~ ! @ # \$ % ^ & * { | , ; " < > ' } + - : ? space characters = [].

Note

For an existing shell, the input box for Email address cannot contain zero (0) because internally the system uses zero (0), at the time of creating the shell, to populate the Project ID (<PID>_). As a result, zero (0) is not a valid input for the Email Address field.

To update the email address:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select the shell name.
3. In the upper-right corner, select **My Dashboard** () , and then select **Details**.
4. In the **Details** window, select the **Options** tab.
5. In the **Email Address** field, enter the new label that you want to use as part of the email address.
For example, the system automatically assigns the Project Number as the customized label. You might want to replace this label with the Project Name.
6. Select **Save**.

User Permissions and Navigation

Navigation from the Landing Page to a specific place in the sub-shell hierarchy requires permissions. Permissions can be:

- Granted on an instance-by-instance basis
- Pushed through shell templates
- Users can be managed through groups or added individually to instances

How to Set Up Gates

Before you begin: Verify that the list of phases resides in the Phase data definition drop-down (pull-down) data set. This is the same list that is used when selecting a phase manually in the shell properties window. You can add or modify the default list as needed. This list makes the phases available for any shell instance or shell type template; for each shell or template, you select which of the phases to use. Create any business processes that you plan to use to drive gates conditions and phase completion.

Step 1: Define Phases. For each shell instance or shell type template, you define the list of phases to include in the setup, choosing from the entire list in the Phase data set.

Step 2: Define Gate Conditions. For each phase, define one or more gate conditions. A gate condition is a combination data element and trigger condition that enable transition to the next phase.

Step 3: Schedule Gates runs. The gates run the validation of gate conditions. You can schedule runs automatically. This is optional.

Step 4: Activate the Gates setup.

Step 5: Define permissions.

Note

- If you create a shell by copying a shell template or an existing shell, any existing gates setup in the source shell is copied into the new shell, including the gates status. The gates phases are restarted at the first phase in the new shell, and the scheduled Gates Run is activated.
- The DE of type Rich Text DE is not available to be added as a Gate Condition Element (Gates, and select Settings).

Example of a Gates Setup and Conditions

You will be setting up phases in gates to represent the actual phases of a shell. For the shell to advance from one phase to another, certain conditions must be met. This example will discuss phases, conditions, and using business processes in the context of the conditions to advance a shell from one phase to another.

For example, phases for shell Zero could be:

- Preliminary
- Investigation
- Definition
- Measurement
- Analysis
- Start
- Control

Previously, you have set up two business processes to use in the conditions for your gates setup. These are:

- **Schedule:** A single record business process that is updated manually by a shell manager by selecting checkboxes for the various phases such as Definition Phase Complete? or Measurement Phase Complete?
- **Funding:** A workflow business process that is automatically updated through the steps of the workflow.

As the shell manager reviews the checkboxes in the phases as represented in the Schedule business process, the Gates Runs keep reviewing the statuses of the checkboxes. As they are checked off, the project advances to the next phase.

The exception to this procedure is the transition from the Analysis phase to the Start phase. Additional approval is needed for funding for the project to advance from Analysis to Start. The Funding business process is included in the conditions for the Analysis phase. This business process must have the status Construction Approved and have a value of greater than zero for the Analysis phase to be exited and the Start phase entered for the project.

Define the Phase List

To view the phase list:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
3. Select the Phase data definition, and select **Open**. The Modify Data Definitions window opens.
4. Select the **Data Set** tab. The active phases on this list will be available for phase setup.
5. Modify the list as needed. Any changes you make here will be reflected in new gates setups. Current setups will not be affected.

Create a Gates Setup

You can create a gates setup in shell templates and in individual shells. There can be one setup per shell instance.

To create a gates setup:

1. Do one of the following:
 - To create the setup in a shell type template, go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **Templates**, and then select **Shells**. Open the shell template.
 - To create the setup in a shell instance, go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **Company Sponsored Shells**. Open the shell instance.
2. In the left Navigator, select **Setup**, and then select **Gates**. The Gates Setup log opens.
3. Select **New**. The gate setup is created automatically. Double-click the setup, or select from the list and select **Open**. The Gates Setup window opens. There are three tabs: General, Settings, Schedule.

4. In the **General** tab, enter a Setup Name, which displays in the log, and an optional Description. At this point, Status is Inactive by default.
5. In the **Settings** tab, define phases and gates conditions.
6. In the **Schedule** tab, schedule regular gates, if applicable.

Delete a Gates Setup

This section describes how to delete a Gates setup from a shell manually.

Note

You can delete a Gates setup from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Shells**.
3. Open the shell template.
4. In the left Navigator, select **Setup**, and then select **Gates**.
5. Select a Gates setup for deletion.
6. Select **Delete**.
7. When the prompt appears that asks you to confirm deletion, select **Yes** to delete the Gates setup.

Add Phases to the Gates Setup (Settings Tab)

Select which of the phases to use in the shell or shell template from the available phase list. You can reorder them as necessary for the shell instance or shell type template.

To add phases to the new gates setup:

1. Open the Gates Setup window, and select the **Settings** tab.
2. In the **Phases** pane, select **Add**.
3. In the **Select Phases** window, select one or more phases to add to the list. To select multiple phases, hold down the **CTRL** or **SHIFT** keys while selecting.
4. Select **OK**. The phases appear in the Phases list.

The order in which the phases appear on the list is the order they will be followed in the shell. The first phase on the list will be the first phase of the shell.

Access Gate Configuration View

To access the gate configuration view:

Select a phase. The gate configure view opens in the right pane. See the following table for more information about the gate configuration view.

The **Phase Gate Configuration** section in the navigator lists the Phases for the current shell. The visual order of the Phases depends on the Order specified in the General tab.

The **Gates Conditions Elements** section lets you define condition criteria per element. Gate Elements will be selected from all data sources and modules available in a particular shell (for the Sponsoring company).

Note

Because Schedule Manager was deprecated starting with version 23.5, it might affect what is available for your use.

In this field	Do this
Start Date	The Start date for a particular Phase can be manually set or auto populated from a Schedule Sheet by linking it to a particular activity or milestone (activity with zero duration and marked as milestone) where it will update dynamically based on the start date associated with this activity. If there are multiple Start dates, choose the Start date used to set Gantt Charts in Schedule Manager. The start date must fall within Shell date ranges.
Planned Completion	Can be manually set or auto populated from a Schedule Sheet by linking it to a particular activity or milestone (activity with zero duration and marked as milestone) where it will update dynamically based on the start date associated with this activity. If there are multiple End dates, choose the End date used to set Gantt Charts in Schedule Manager. Note Dates are for reporting only. Phases cannot be date driven.
Advance to Next Phase	This checkbox enables automatic phase advancement. Select the checkbox if you want the shell to move automatically to the next phase after all Gate Elements for a particular Phase have been checked.
Notify users on Phase Completion	Lets you define users who receive phase completion notification. You can configure the body text in the notification (similar to the business process Setup on the End Step, where you can specify the message text content.

In this field	Do this
Reevaluate conditions on every Gates run	When selected, this checkbox specifies that processing always starts at the First phase during a scheduled Gates Run/Refresh. You might have to scroll down to see this checkbox. If the checkbox is not selected for a phase: • If the phase is currently incomplete, incomplete conditions are evaluated and completed conditions are skipped • If the phase is currently complete, phase processing is skipped If the checkbox is selected in a phase: • Every condition in that phase is reevaluated. Including conditions that were met • All conditions (except conditions that were marked as "ignore" manually) are marked as incomplete at the beginning of every Gates Run and refresh. Saved Gates Run (PDF) from prior runs persist. Processing will stop at a Phase where first un-met condition is encountered. By default, this checkbox is deselected.

Configure Gate Elements

To add a Gate Condition Element:

1. In the **Gate Conditions Elements** section of the **Gates Setup** window, select a phase, and select **Add**. The Data Type window opens.
2. Select a data type from the **Data Type** list, and select **OK**.
3. In the **Edit Gate Condition** window, complete the **General** tab
 - a. **Name:** Enter a name for the Gate Element. This can be the name of the data element or any descriptive name. This appears on the **Gate Conditions Elements** list.
 - b. **Description:** Add an optional description for the **Gate Element**.
 - c. Select **Apply** to save changes, or select **OK** to save changes and exit the window.
4. In the **Edit Gate Condition** window, complete the **Query** tab to define query and trigger conditions.
 - a. In the **Query Conditions** section, select **Add**.
5. In the **Query Condition** window, complete the **Query** tab:
 - a. **Data Element:** Click **Select**.
 - i. In the **Data Element Picker** window:
 - i. **Data Source:** Select a data source from the **Data Source** list. For example, select a query-based tab.
 - ii. **Column:** Select a data element, and then select **OK**.

Note

The list of data elements is generated from the data type you chose in the **General** tab. If the data element is a picker, drop-down (pull-down), or radio button, the **Value** field will display the values entered in the data set tab for the data definition associated with the data element. For a full list of data elements and data types, refer to the *Unifier Data Reference Guide*.

- b. **Label:** The label defaults to the data element name. You can enter a different label.
 - c. **Condition:** Select the condition that needs to be satisfied for the Gates Element Condition from the list. The condition options vary dynamically depending on the selected **Data Element**.
 - d. **Values:** Specify a value for the condition. The **Values** field varies dynamically depending on the selected **Data Element** and **Condition**. For example, if the element is a text box, the condition might be **Contains**, and Value might be one or more letters to search for. If the element is a drop-down (pull-down) or other data definition with a data set, you will select a value from the data set.
 - **Show results matching any condition (Instead of all):** Select this checkbox if you have defined multiple query conditions, for which only one needs to be satisfied to advance to the next phase
6. The **Trigger Condition** section operates similar to the **Query Conditions** section, except you can create a formula for the desired condition.

Change the Order of Phases

To change the order of the phases in a gates setup:

Select a phase, and select **Move Up** or **Move Down**.

Define Gates Runs Schedule (Schedule Tab)

You can define a Gates Run schedule in the Gates Setup window, Schedule tab. This run evaluates gates conditions and marks completed conditions as Complete. The update process can also be invoked manually in user mode. The scheduler engine is a background process.

In this field:	Do this:
Enable Scheduled Gates Runs	Select this checkbox to enable scheduled updating of Gate Elements. Deselecting this checkbox will disable the scheduler, and any scheduled future runs will be canceled immediately. The scheduled gates runs are disabled in the last phase provided all conditions are met, and the Enable Scheduled Gates Runs checkbox is automatically deselected.
Frequency	Choose Frequency of the Scheduled Gates Runs (Daily, weekly, monthly, quarterly, yearly)
Range of Recurrence	You can specify a date on which the Gate Runs will end, or no end date.

In this field:	Do this:
Auto-email as PDF Attachment to Gates creator	Select this checkbox to enable automatic emailing of the scheduled run results as a PDF attachment. The report displays the current status of each phase and gate condition.

Activate or Deactivate a Gates Setup

Activating a gates setup will enable the scheduled gates runs. After activation, if you must edit the gates setup, you will need to deactivate it first. To change the status of the gates setup, use the **Status** drop-down menu in the Gates Setup log.

You can make edits while the setup is inactive, including: adding or removing phases; reordering phases; adding, modifying, or removing conditions within a phase.

Some notes about activating/deactivating gates setup:

- **Reactivating an active shell:** If you temporarily deactivate a shell that is in process and then reactivate it, the gates check will start over at the first phase. This is because the setup needs to check all phases for new phase additions or new gate conditions that may have been added. You can manually update the phases by selecting Refresh for gates in User mode. This will evaluate all phases starting from the first phase, even if the phase has been marked Complete, and mark the first phase as the current phase.

Note

This may trigger email notifications regarding gates advancement, as set up in the Settings tab (where the users who are notified are defined) and those users' email subscription settings (User Preferences).

- **While a gates setup is Inactive:** No scheduled gates run will be done. To manually advance phases in User Mode Gates for the shell, the gates setup must be active.
- **View-Only and Inactive shells:** If a shell has the View-Only or Inactive status, the gates setup is inactivated, and you must manually reactivate the setup.

Set User Permissions for Gates

To grant User Mode Gates permissions:

In Access Control or Permissions window, navigate to **User Mode Access**, expand **Projects/ Shells**, and then select **Gates**. The permissions are:

- **Change Phase:** Allows the user to change gates phases.
- **Modify and Refresh:** Allows the user to modify gates and refresh gates.
- **Refresh:** Allows the user to refresh gates.
- **View:** Allows the user to view gates.

Editing Multiple Shells at Once with Bulk Edit

If you have a large number of shells that need similar edits, you can use bulk edit to update all of them at once. You can update a maximum of 200 records using bulk shell edit. The bulk edit must be defined in uDesigner, and you must have the Allow Bulk Edit permission set on the shells to use the bulk edit.

The bulk edit function works only on fields from the action form (upper form) for the current step. It *cannot* be used to edit the following:

- Auto-populated fields
- Fields in a dynamic data set
- Read-only fields
- System-generated fields, such as record number, status, or due date
- BP Line Item Data Picker
- BP Data Picker if it has an associated Line Item Data Picker configured

Note

- An Integration interface must be created for Bulk Edit to work with Shells.
- You can use bulk processing to update users in shells. For more information, see Managing Users in Bulk.

To edit shells using bulk edit:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**.
3. Open a shell type and select one or more shells, or perform a Find to search for a group of shells to work with.
You can select the shells from the shell log or the Find log.
4. From the toolbar, select **Actions**, and select **Bulk Edit**.
The Bulk Edit window displays. The fields displayed in this window depend on what was specified for the shell.

The Bulk Edit form includes all editable fields for the shell. All system-generated elements and formula columns are automatically recalculated during the bulk edit for each record.
5. Modify the Bulk Edit form as needed.
6. Select the **Update** checkbox for the fields you want to update.
The checkbox is automatically selected when you type into or modify a field. You can deselect it if you do not want to modify the field at this time.
7. To launch the bulk update of the selected records, select **Update**.
The Bulk Actions Status window opens after you select **Update**. This window lets you monitor the progress of the bulk update.

Note

If the Record Status defined for any of the targeted shells been inactivated, an error is displayed that requires selection of an active Record Status to continue.

8. Select **OK** after all records have processed. Select **Cancel** if you want to cancel the bulk update in progress.

About Shell Dashboards

Shell dashboards display project data in an at-a-glance format. You can control the dashboard appearance and content and make it specific to the shell with which you are working; however, shell dashboards cannot pull data from across shell hierarchies. For example, consider two anchor shells, which are seen as tabs, one is labeled "Capital Projects," and one is labeled "Facilities." The Capital Projects dashboard can display data from all levels of the Capital Projects hierarchy; however, it cannot display Facilities data because Facilities is the root of a separate, independent hierarchy.

Two types of dashboards are available in project shells:

1. **My Dashboard:** All shells have a personal dashboard that a user can define if he or she has Setup permission. A user can configure **My Dashboard** in **User** mode using the **Edit Dashboard** window. Users can select **My Dashboard** from the **View Dashboard** (drop-down list) on each shell.
2. **Shell dashboards:** Shell dashboards allow users to view shell and subordinate shell data. This differs from **My Dashboard** in that a user cannot share his or her personalized dashboard. Administrators can create multiple shell dashboards per shell and push them via templates. Users can select this type of dashboard to view from the **View Dashboard** (drop-down list) on each shell. These dashboards are maintained at the shell level and are available to any user to view (but not edit) provided the user has permissions.

Each shell dashboard has at least one tab and can have up to five tabs. The default tab name is Summary, which you can change. The default shell dashboard layout contains these four blocks:

- **Image:** Displays the image your company administrator uploaded for the shell.
 - In the dashboards, if there are multiple images, the system displays all the images as rolling images.
 - When a shell has multiple images, the system uses the first image from the list to print the shell image through custom prints and reports.
- **Items Requiring Your Attention:** Contains items that are generally listed on the Home tab, such as tasks and messages.
- **Details:** Lists shell details, including shell number, shell name, administrator, and other details.
- **Links:** List of links configured for the shell by your company administrator.

On each tab, you can select a different layout to which you can add blocks of these types:

- **Custom:** Use this selection to view data from the current shell, subordinate shells, or both (cannot cross hierarchies).
- **Standard:** Use this selection to view project data from, for example, business process, manager, users, and active tasks.
- **Portlet:** Use this selection to view an external Uniform Resource Locator (URL), such as a web cam, a frequently visited website, or Analytics application.
To view Analytics in the **Portlet** block, you must perform additional and required configurations in Oracle Analytics Server to allow the analysis to render properly. For additional information, go to: <https://docs.oracle.com/en/middleware/bi/analytics-server/index.html>

Note

When you specify a URL, the source (the targeted URL) must support the use of an inline frame (iFrame). If the source website does not support iFrame for security reasons, Unifier cannot render or display the site within the portlet block. Instead, the system displays a blank or white page. To work around this issue, you must view the URL in a standard web browser instead of from within Unifier.

- **Drilldown:** Use this selection to slice and dice project-shell data.
- **Analytics:** Use this selection to access the link to the Analytics application.

Setting Shell Instance Dashboard Permissions

To set shell instance dashboard permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Permissions for Projects/Shells**, expand **Setup**, and then select **Dashboards**.
4. Set the permissions as needed:
Setup: Administrators can create a shell instance dashboard.

Creating a Shell Dashboard in a Template

You can create dashboards in shell templates and push them to shells.

To create a dashboard in a shell template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Select **Create**.
5. Enter the dashboard name and an optional description. The dashboard name must be unique within the shell.
6. Select **Save**. The dashboard is listed in the log.
7. Select the dashboard in the log, and select **Open** from the *gear menu* (). The default view of the shell dashboard opens.

Note

You might not see data in parts of the dashboard if you do not have specific permissions to access data cubes.

You can edit a dashboard in an established project shell. For details, refer to the *Unifier General User Guide*.

Copy a Shell Dashboard

You can create shell dashboards by copying and modifying existing dashboards. Copying a shell dashboard does not copy the permissions associated with the dashboard, but will copy all other dashboard information.

To copy a shell dashboard:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Select a shell dashboard.
5. Open the *gear menu* () , and select **Copy**.
6. Enter the name of the new dashboard and an optional description.
7. Select **Save**. The dashboard is listed in the log.
8. Select the dashboard in the log, open the *gear menu*, and select **Open**. The shell dashboard editor opens.
9. Modify the new dashboard as needed and **Save**.

Modify Shell Instance Dashboard Properties

To modify shell instance dashboard properties:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Select a shell instance dashboard.
5. In the right pane, select the **Properties** tab.
6. Modify the dashboard name or description as needed.
7. Select **Save**.

Delete a Shell Instance Dashboard

To delete a shell instance dashboard:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.

4. Select a shell instance dashboard, and open the *gear menu* (⚙️).
5. Select **Delete**.

Find a Shell Instance Dashboard

To find a shell instance dashboard:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Use **Find on Page** to filter the log based on column values.

Set User or Group Permission for a Shell Instance Dashboard

To set user or group permission for a shell instance dashboard:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Select a shell instance dashboard.
5. In the right pane, select the **Permissions** tab.
6. Add users or groups as needed. Select the **View** permission.
7. Select **Save** to save or **Cancel** to exit.

Set a Default Shell Dashboard

To set a shell instance dashboard as the default dashboard for the shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, and then select **Dashboards**. The Dashboards log opens.
4. Select a shell instance dashboard.
5. From the *gear menu* (⚙️), select **Mark as Default**.
6. Select **Yes** to confirm. The **Default** column of the log will now display **Yes** for the default dashboard. Only one dashboard can be set as the default dashboard.

To unmark a shell as default, select the *gear menu* for the default dashboard, and select **Unmark Default**.

Migrating Projects (Standard) to CBS Shells

You can migrate one or multiple standard projects (**Projects (Standard)**) of any status (Active, On-Hold, View-Only, or Inactive) to CBS shell types that you specify. After migration, the new CBS shell is created in the shell hierarchy in the location you specify, and the standard project is no longer listed in the project log. All the data that existed under the standard project can then be accessed from the newly-created CBS shell.

Note

When you migrate a standard project to a CBS shell, you cannot undo the migration and return the shell to the standard project form. The migration cannot be reversed, so be sure that you want to perform the project-to-shell migration.

After you migrate standard projects to CBS shells, you can use the features that shells offer, such as:

- Hierarchical distribution, visualization and navigation of capital projects when organized under shell hierarchies based on business needs
- Configurable dashboards
- Roll up of cost data across the shell hierarchy

Migrating Projects (Standard) Limitations

The following are some migration limitations for you to consider:

- The shell type must be a CBS shell. You cannot migrate standard projects to generic shells, only to CBS shells.
- Shell name is limited to 128 characters, and shell description is limited to 250 characters. However, standard project name is limited to 250 characters, and the project description is limited to 2000 characters. For the migration from project to CBS shell to be successful, you must modify the project name and description to be within the limits for these fields that exist for the shells (128 characters for a shell name and 250 characters for a shell description).
- The standard project name cannot contain any special characters, such as:
\\:*?"<>|
- You cannot migrate a standard project to a single instance (top-level) shell. You can only migrate to multiple-instance shells.
- Even if the destination CBS shell type has auto-numbering set up, the migration cannot incorporate the new shell into the shell auto-numbering; instead, it copies the project number while creating the shell. The new shell is identified by the project number of the original project.
- You will have to set up a new configurable shell dashboard for the new shell that is created by the migration. Any existing project summary set up does not migrate to the new shell.
- If any business processes, planning items, assets, or configurable managers in the original project use project pickers, you will have to re-create the link between these objects and the new shell.

- Migration from a standard project to a CBS shell cannot be reversed. After the migration is complete, the standard project is converted to a CBS shell, and the information from that project resides in the newly-created CBS shell.

Migrating Projects (Standard) Considerations

Before you migrate:

- Be sure that you have Integration defined for the CBS shells you plan to use for migration.
- Examine the shell hierarchy of your CBS shells and determine the location for the new migrated shells. You can migrate several projects at once into a shell type, creating a new shell instance under that shell type for each migrated project.
- Examine the setups for the original projects and also for the destination shells, and think about the mapping from the project to the shell. You might have to add data elements on the project side or the shell side to ensure that the data you need is migrated correctly and completely. For example, the shell name is limited to 128 characters and shell description is limited to 250 characters. However, standard project name is limited to 250 characters and the project description is limited to 2000 characters. For the migration from project to CBS shell to be successful, you must modify the project name and description to be within the limits for these fields that exist for the shells (128 characters for a shell name and 250 characters for a shell description).
- To ensure that the migration is successful and yields the desired result, test your migration in your **Test** environment before implementing it in your **Production** environment.
- You can use user-defined reports to gather data regarding which projects to migrate and the location they should occupy in the shell hierarchy.
- Understand that migration cannot be undone; when you migrate a project to a CBS shell, you cannot go back to that project. The project is converted completely to a CBS shell when the migration completes successfully.

Migrating Projects (Standard): Mapping of Project DEs to Shell DEs

The following table shows the automatic mapping of original project data elements to destination CBS shell data elements. These data elements define the fields shown on the project/shell setup window tabs. This mapping occurs automatically during the migration. When a standard project is migrated to a CBS shell, the project's data element values are automatically populated in the equivalent shell data element as listed in the table:

General tab of CBS shell

Standard project data element	CBS shell data element	Comments on action during migration
Project Number	Shell Number	One-to-one mapping occurs.
Project Name	Shell Name	One-to-one mapping occurs.
Description	Description	One-to-one mapping occurs.
Administrator	Administrator	One-to-one mapping occurs.
Project Status	Shell Status	One-to-one mapping occurs.
Auto-update Status Setup	Auto-update Status Setup	Optional on the Shell Attribute Form; if not present on the Shell form, is ignored during migration.

Currency tab of CBS shell

Standard project data element	CBS shell data element	Comments on action during migration
Currency Name	Currency Name	One-to-one mapping occurs for all defined currencies.
Rate	Rate	One-to-one mapping occurs for all defined currencies.
Type	Type	One-to-one mapping occurs for all defined currencies.
Hedge Rate	Hedge Rate	One-to-one mapping occurs for all defined currencies.
Hedge Amount	Hedge Amount	One-to-one mapping occurs for all defined currencies.
Default Currency	Default Currency	One-to-one mapping occurs.

Options tab of CBS shell

Standard project data element	CBS shell data element	Comments on action during migration
Project Image	Image	One-to-one mapping occurs.
Project Phase	Phase	One-to-one mapping occurs.

Links tab of CBS shell

Standard project data element	CBS shell data element	Comments on action during migration
Name	Name	One-to-one mapping occurs for all defined links.
URL	URL	One-to-one mapping occurs for all defined links.

Migrating Projects (Standard) to shells

Before you begin: Make sure that you review the limitations, considerations, and mapping information described in the preceding topics.

Step 1: Export the migration template. Export the CSV template. This template will vary depending on the data elements included in the configuration of a particular shell type. This template contains the fields and format that the system needs to migrate the standard projects to CBS shells. See [Exporting Migration Template](#).

Step 2: Modify the exported CSV template. Be sure that you have the correct project information ready to enter into the template. After you convert a standard project into a CBS shell, you cannot reverse the conversion. See [Modifying Exported CSV Template](#).

Step 3: Initiate migration. Import the completed CSV file. See [Initiating Migration of Standard Projects to CBS Shells](#).

Step 4: View migration history. See [Viewing Migration History](#).

Step 5: Test for shell creation. See [Testing for CBS Shell Creation](#).

You export the template, and then modify it and import it. You will export the template from a selected CBS shell, and then import the modified template back into the same CBS shell to complete the migration.

Exporting Migration Template

To export the migration template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable [CBS shell type].

Note

The shell type must be for a CBS shell. You cannot migrate standard projects to generic shells, only to CBS shells. You cannot migrate a standard project to a single instance (top level) shell, only multiple-instance shells.

3. From the toolbar, select **Actions**, select **Export Template**, and then select **Project Migration Template**.
The template, which is downloaded to your computers, will be specific to the shell type of the log from which you exported the template.

Modifying Exported CSV Template

Be sure that you have the correct project information ready to enter into the template. After you convert a standard project into a CBS shell, you cannot reverse the conversion.

Note

You can use user-defined reports to gather data regarding which projects to migrate and where they should be in the shell hierarchy.

To modify the template:

1. Open and edit the CSV template, per the template content, and the description of the template content in this section.
The content of the migration template will vary depending on the shell type into which you choose to migrate.

The exported template is organized in three sections:

- **Instructions:** This section at the top of the template explains how to fill in the template to initiate the migration. Do not modify this text.
- **Mapping:** This section maps the available standard project attributes with the user-defined CBS shell attributes. Use this section to create mapping for data elements that you have added in addition to the data elements listed in the table in [Migrating Projects \(Standard\): Mapping of Project DEs to Shell DEs](#). The Mapping section lists all the project attributes which are not automatically mapped. If you use custom project attributes, these attributes are listed and mapped in this section. The values in this section are overwritten by any literal values that you add in the Project section.

- **Project:** This section lists the Project Number and Location and the user-defined CBS shell attributes as column headings. Project Number and Location are required; the other columns are not and are based on the attributes listed in the Mapping section. This list does not include the automatically-mapped shell attributes such as Shell Name or Shell Number. Add a row for each project you want to migrate, and enter the Project Number and the Location. The location should be delimited with /. For example: /Capital Project/Buildings/Tool Sheds. Add the literal values that are to be changed during the migration.

Note

Projects are identified by the Project Number for migration. Be sure that you enter the correct project numbers for standard projects you want to migrate to CBS shells.

2. Save the template CSV file.

Initiating Migration of Standard Projects to CBS Shells

You can migrate several projects at once into a shell type, creating a new shell instance under that shell type for each migrated project. Before you initiate the migration, ensure that you have the Create permission on the destination shell type. You can export the template from a selected CBS shell, and you can then import the modified template back into the same CBS shell to complete the migration.

Note

You cannot undo the migration of standard projects to CBS shells after the migration completes successfully. Verify that you have completed the CSV migration template correctly, especially in terms of the Project Number.

To initiate migration:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable **[CBS shell type]**.
3. From the toolbar, select **Actions**, select **Import**, and then select **Migrate Projects into Shells**.
4. Browse for the CSV file, and select **OK**.
This imports the migration template and performs validations on the data. The migration is a background process. Each project listed in the CSV file is migrated into a CBS shell based on the mapping and values provided in the CSV. Project migration is either successful or not. Validation is performed before migration, and if there are any errors, a project is not migrated. Errors can include incorrect mapping or invalid format of the project rows (including changing column order or adding or removing columns).

Viewing Migration History

You can view the status of each submitted migration by using the Migration History.

To view migration history:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and then select the applicable **[CBS shell type]**.
3. From the toolbar, select **Actions**, select **Import**, and then select **Migration History**. Each submitted migration is listed in Migration History with one of these statuses:
 - **Not Started**: The migration process has not started.
 - **In Progress**: The migration process is in progress.
 - **Completed Successfully**: The migration of all standard projects completed, and the corresponding CBS shells have been created.
 - **Completed with Errors**: The migration of standard projects has completed, however, there were some errors that prevented the migration of some of the projects to CBS shells.

Potential migration errors:

- Location entered is invalid. This error can occur if the location does not exist or is inactive in the shell hierarchy.
 - Cannot create an instance of the shell type under the location entered; does not exist in the shell hierarchy.
 - Project number might be the same as the number of an existing shell in the hierarchy. Shell numbers must be unique.
 - String values are entered incorrectly. Enter the labels for sting values.
 - The standard project name is limited to 250 characters, and the project description is limited to 2000 characters. For the migration from project to CBS shell to be successful, you must modify the project name and description to be within the limits for these fields that exist for the shells (128 characters for a shell name and 250 characters for a shell description). Any error can result if the project name or project description are longer than the character limits for the shell name and shell description.
4. If any of the projects did not migrate due to errors, you can view the CSV with the rows that have errors by selecting the Completed with Errors status hyperlink. This link allows you to download the CSV containing any errors. This file is in the same format as the submitted CSV, with all mapping information retained. However, in the Project section, only the rows that have errors in them are shown with an additional column added that contains error comments. You can use this CSV file to review the errors and then re-import the file after you correct the errors.
 5. Select **Close** to close the Project Migration History window.

Testing for CBS Shell Creation

Ensure that your new CBS shell is created correctly and contains the attributes that you expect:

- The shell instance should be accessible in Administrator (Admin) and User mode(for Unifier and Unifier Mobile under the parent shell it was migrated to.
- Users should be able to navigate to the business process and other manager data under the new CBS shell.
- Shell creation will trigger email notification.

- User and group memberships should remain same as on the original standard project.
- All the auto-population, reverse auto-population, linked elements, and other settings should work as they did on the original standard project.

Setting Up Automatic Update of Shell Status

At the Company level, you can define the setup of the automatic update of project statuses of active projects based on triggering conditions which are defined using various data sources as parameters. For example:

- A selected activity on the existing schedule sheet is in the Completed status
- A single-record business process record is set to a specified status
- A business process workflow reaches a specified status

Depending on the setup and the conditions that are set, the status of the shell can change from Active to a non-active status (On-Hold, View-Only, or Inactive). You can define multiple setups for each shell. After you define these setups, they can be used on shell instances, or on templates to enable the automatic update of shell status.

The data sources that you use in the triggering conditions can be either from shell level or from the Company level. These data sources can be business processes, sheets, or attribute forms. You can define the frequency at which the system evaluates the conditions to see if a particular active shell should change its status, and you can define a list of users or groups to be notified when the shell status is changed. The highest frequency is daily.

This automatic update of shell status can be useful for users that have a large number of shells and want many of these shells to change their status based on certain triggering conditions, and thus the users do not have to search for and modify these shells manually. For example, you can define a setup that contains a triggering condition that changes the status of an active shell to "On-Hold" if the shell funds consumption exceeds the funds appropriated for that shell. This allows the shell manager to review the shell and take appropriate action. If, in this case, the shell manager is able to get additional funding for the shell, the Administrator can change the shell status back to Active to restart the shell activities.

Note

An automatic shell status update can change the status of a shell from Active to inactive. If you want the inactive shell status to revert to Active, you must activate the shell manually.

Step 1: Create setups - general information.

Step 2: Verify the order of shell statuses.

Step 3: Define shell status triggering conditions.

Step 4: Define the schedule for automatic update of shell status.

Step 5: Activate the automatic update of shell status.

Step 6: Define permissions.

Create an Automatic Shell Status Update Setup

Multiple setups can be defined at the company level and then used to configure individual shells.

Note

You must have imported a Shell Attribute Form that contains the `uuu_au_setup_picker` data element to be able to set up the automatic update of shell status.

To create a shell status update setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Auto-update Status Setup**. The Auto-Update Status Setup log opens.
3. Select **New**. The Auto-update Status Setup window opens. There are three tabs: General, Settings, Schedule.
4. In the **General** tab, enter a Setup Name, which displays in the log, and an optional Description.
5. In the **Settings** tab, define the order of the non-active statuses and the status change query and trigger conditions. For details, see [Choose the Order of Non-Active Statuses \(Settings Tab\)](#) and [Define Status Change Query and Trigger Conditions \(Settings Tab\)](#).
6. In the **Schedule** tab, you can schedule the shell status update. See [Define Shell Status Update Schedule \(Schedule Tab\)](#).
7. After you have defined the setup, you must activate it to be able to apply it to a shell. See [Activate or Deactivate an Auto-Update Status Setup](#).

Note

You must deactivate a setup to be able to modify it.

Choose the Order of Non-Active Statuses (Settings Tab)

By default, the order of the listed statuses is **On-Hold**, **View-Only**, and **Inactive**. These are listed on the left side of the **Settings** tab in the Status pane. You can change the order using **Move Up** or **Move Down**. You can change the order of the non-active statuses. The order of the statuses is significant because the triggering conditions for the statuses are evaluated in the order in which they are listed on this tab, with the verification of the triggering conditions occurring for each condition listed in turn.

For example, if the conditions for the first listed status are not met, the conditions for the next listed status are evaluated. If the conditions for that status are not met, the triggering conditions for the third status conditions are evaluated. As soon as the first match occurs, the system will automatically change the shell status and does not perform further evaluation.

To reorder inactive shell statuses:

1. Open the Auto-update Status Setup window, and select the **Settings** tab.
2. In the **Status** pane, select the status you want to move.
3. Select **Move Up** or **Move Down** to reposition the selected status.

4. Select **Apply** to save changes, or select **OK** to save changes and exit the window.

Define Status Change Query and Trigger Conditions (Settings Tab)

The **Conditions Elements** section lets you define condition criteria per element. Elements can be selected from all data sources and modules available at the Company level.

In this field:	Do this:
Notify users and groups on Status change	Lets you define the users and groups who will receive status change notification.
Email content	Enter the content of the email you want to send to notified users and groups. This content appears in the Additional Information section of the email.

To define query and trigger conditions:

1. Under **Conditions Elements**, select **Add**.
2. Select a **Data Type**, and select **OK**. The Query Condition window opens.
3. Complete the **General** tab by entering a name for the query and a brief description. The Data type and Element is auto-populated from the selection you make on the Query tab.
4. Select the **Query** tab.
5. Select **Add**.
6. Complete the **Query** tab:
 - **Data Element:** Click **Select**. The Data Element Picker opens. The list is generated from the data type you chose in the General tab. If the data element is a picker, drop-down (pull-down), or radio button, the Value field will display the values entered in the data set tab of for the data definition associated with the data element. For a full list of data elements and data types, refer to the *Unifier Data Reference Guide*.
 - **Label:** The label defaults to the data element name. You can enter a different label.
 - **Condition:** Define Gate Condition Element Condition. The condition options vary dynamically depending on the selected Data Element. The screen shots below list out the various options for different Data Element types. Examples include equals, does not equal.
 - **Values:** Specify value. The Values field varies dynamically depending on the selected Data Element and Condition. (For example, if the element is a text box, the condition might be Contains and value might be one or more letters to search for. If the element is a drop-down (pull-down) or other data definition with a data set, you will select a value from the data set.)
7. Select the trigger conditions.
8. Select **OK**.

Define Shell Status Update Schedule (Schedule Tab)

You can define a schedule to check the conditions for the automatic update in the Auto-update Status Setup window, Schedule tab.

The maximum frequency that the system will verify whether triggering conditions are met is daily. If you have a need for greater frequency of verification, you must monitor the shell with the shell manager and then change the shell status manually as needed. For example, if the triggering condition verification is performed in the morning and the shell funds are being spent during the course of the day, the shell could exceed its budget before the condition verification occurs the next morning, and the shell status is automatically changed.

In this field:	Do this:
Enable Scheduled Runs	Select this checkbox to enable scheduled evaluating of the automatic update status. Deselecting this checkbox will disable the scheduler, and any scheduled future runs will be canceled immediately. The scheduled evaluation is disabled for the last status in the list, provided all conditions are met, and the Enable Scheduled Runs checkbox is automatically deselected.
Frequency	Choose Frequency of the Scheduled Runs (Daily, weekly, monthly, quarterly, yearly)
Range of Recurrence	You can specify a date on which the Scheduled Runs will end, or no end date.

Activate or Deactivate an Auto-Update Status Setup

You must activate a setup to be able to apply it to a shell.

Note

You must deactivate a setup to be able to modify it.

To activate or deactivate a shell status update setup:

1. To activate or deactivate a new setup to use in shells, go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Auto-update Status Setup**. The Auto-Update Status Setup log opens.
3. Select a setup in the log.
4. Select **Status**. You can choose **Active** or **Inactive**.

Set Permissions for Automatic Update of Shell Status

To set permissions for automatic status update:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Company Workspace**, and then select **Auto-update Status Setup**. The permissions are:
 - **Create:** Allows the creation of new auto-update status setups, edit existing auto-update status setups, and activate or deactivate auto-update status setups.

- **Modify:** Allows the edit of existing auto-update status setups and activate or deactivate auto-update status setups. This permission excludes the ability to create an auto-update status setup.
- **View:** Allows viewing of existing auto-update status setups.

Setting Up Data Structure Setup Node

This section explains how to set up the information in the **Data Structure Setup** grouping node which includes:

System Modules

Functionality is loaded into the system through various modules (grouping nodes and functional nodes).

Data Cube Definitions

A data cube definition is a query tool you can use to extract data and display it on dashboards.

Data Definitions

Data definitions describe how data is entered and stored. The definition consists of:

- The data type (whether it is an alphabetical string or a number),
- The data size (in number of characters for strings), and
- The input method (from a text box, drop-down [pull-down] menu, radio button, or checkbox).

You must create data definitions before you specify the data elements for forms. A data definition can belong to one of the following categories:

- **Basic:** Predefined or user-defined Data Definitions that contain all Data Definitions except the Cost Code definitions.
- For the SYS User Date Format Data Definition, the data set supports the 24-hour time format. In the User Preferences form, under the Regions tab, the field Date Format uses SYS User Date Format Data Definition.
- **Cost Codes:** Displays the type of cost code (fields that define the structure of the Cost Codes) specified in uDesigner for the project. The type of cost code available for Projects/ Shells is CBS.
- **Data Picker:** Data pickers work with business processes logs and can be used to fetch items from across multiple shells and configurable managers that function across a shell hierarchy. The purpose of a **Data Picker** is to make it easier for users to choose records:
 - From a business process log
 - From a class in a configurable manager that operates across shells
 - For auto-creation across shells

A data picker log, when defined accordingly, can contain navigation structure that makes it easier for users to choose records to work with.

In operation, a data picker navigates to a specific business process, shell, or configurable manager and then extracts the records to display on the data picker list (by using pre-defined Query conditions that were included on the data picker).
- **Line Item Data Picker:** This is a system-defined Basic data definition.

Data Elements

A Data Element is a field, and it is defined by using a Data Definition. A Data Element consists of a name and label. The forms that the users see are filled by data elements. A data element can be:

- A text box, where the user types in information
- A drop-down (pull-down) menu of choices (also known as a picker), such as dates or names
- A radio button, where the user must select one of the options presented
- A checkbox, where the user has the option of choosing something or not

Data Views

Provides a view of data obtained via SQL query. It allows access to all Unifier database tables in a company registry (registry dependency ensures data security). Data Views enable administrators to design and deploy custom reports, create user-defined reports (UDRs), and utilize data as a source for **Data Cube Definitions** in dashboards.

Dynamic Data Sets

A dynamic data set is comprised of a "set" of data elements where one data element, known as Master Data Element, controls the values and behavior of other data elements in the set.

Reports

The Site Administrator loads the System and Custom Logs report modules.

Statuses

Statuses are created in the Data Structure Setup node and indicate the position of an asset, line item, record, and tag at any point in the business process, such as "approved," "pending," or "closed." The status is what drives the workflow from one step to the next.

- **Assets Statuses:** An asset status controls which assets are displayed on an Asset class sheet, instead of impacting the disposition of a business process or line item like other statuses.
- **Line Item Statuses:** A line item status is the status of the line item that belongs to a business process record.
- **Record Statuses:** At each transaction, the user must apply a status to the record. Each business process produces at least one, and sometimes many, transaction records during its workflow.

ER Views

Provides a tabular view of Data Elements and Data Definitions used in modules.

Working with System and Configurable Modules

Functionality is loaded into the system through various modules. For example, the Cost Manager is a system module that provides cost functionality. Also, your system might contain various configurable modules created in uDesigner.

Some modules can be customized with "custom attributes," which are customized data fields, described later in this section.

View Available System and Configurable modules

To view the System Modules log:

- 1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
- 2. In the left Navigator, select **Data Structure Setup**, and then select **System Modules**.
The Modules log opens, showing all the modules and functions that have been loaded into your environment.

View Custom Attributes for the Project/Shell Sponsorship Module

You can view custom attributes that were assigned to standard projects that were previously deployed.

To view custom attributes:

- 1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
- 2. In the left Navigator, select **Data Structure Setup**, and then select **System Modules**.
- 3. In the Modules log, double-click **Project/Shell Sponsorship**.
- 4. Use the Custom Attributes window to view information such as the **Name** and **Status**.
- 5. When you are done, select **Close**.

Working with Data Definitions

Data definitions define the data type and input type of a data element. Data elements are created from data definitions. The following lists the types of data definitions:

- **Basic**
- **Cost Codes**
- **Data Picker**

About Data Definition Properties

Data definitions can be of the following Data Types:

- **String**: Any alphanumeric character or special character like * or #
- **Integer**: A non-decimal number. Can be used for drop-down (pull-down) menus, radio buttons, or checkbox fields
- **Date**: For date fields
- **Float**: This is applicable to currency amounts only
- **Input**: This determines how data is entered or displayed in the field

This input method:	Does this:
Check box	Provides an option that the user can select ("check") or not. "Not checked" is the default value.
Multi-line text area	Use this element for multiple text lines for entries up to 4000 characters long, such as descriptions or remarks.
Multi-select Input	Lets the user make multiple selections from a list.

This input method:	Does this:
Picker	Lets users choose from lists of items. Pickers are system-defined and cannot be created in Unifier. The system has multiple pre-defined pickers. A Picker can be added to a BP to lets users cross-reference another record. Pickers include, but not limited to: • BP Picker • BPO Picker • User Picker • Company Picker • Line Item Picker • SOV Picker • Fund Picker • Asset Picker • Project Picker Shell Picker
Pull-down menu	Provides a list of items the user can choose from but cannot change (for example, a date picker).
Radio buttons	Use where two values are possible and one must be selected.
Text box	A text box is usually used for smaller text (1 to 64 characters), but could be longer.
Dynamic Data Set	A dynamic data set allows one data element on the form to control both values and behavior of other data elements on the same form. (In this example, choosing Yes in the Single Project field activated the Project Picker field below it.)

To prevent the Upper Form or Detail form of any BP, for a field with DD set as Integer data type with input-type pull-down menu (option value for DE of type Integer) from displaying the field (and the field label) in the BP record, ensure that the value of 1, or above, is assigned to the DD set as Integer data type with input-type pull-down menu (option value for DE of type Integer) to that field. Assigning the value of zero will result in the field (and the field label) to be displayed in the BP record, when the user does not enter a value in such fields during runtime.

View Basic Data Definitions

To access Basic Data Definitions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**. The Basic Data Definitions log opens. The system-generated data definitions are listed as Company or System in the Category field.

Field	Description
Name	Descriptive name for the data definition. This is the database name; it accepts alphanumeric characters, spaces, - (dash) and _ (underscore).
Category	General: Defaults to Company Cost Code: Defaults to CBS Code

Field	Description
Data Type	String or Integer String: Any alphanumeric character or special character like * or # Integer: Non-decimal numbers If a Data Definition (DD) with the Data Type = Integer or Input Type - Pull-down Menu, and the Data Set value of 0 (zero), the value of 0 (zero) overrides the default value. If a Data Element (DE) exists for such DD and the DE is used as the master DE in a Data Definition Structure (DDS), the DDS will not override the DE value when the DD is created, if the default value of the master DE is set to a field that has the value of 0 (zero).
Data Size	This field is available for text entry fields. Displays the number of characters that the data definition will accept.  Note - The maximum limit for the Data Size is determined by the database being used with your installation. Check with your Site Administrator for the actual maximum allowable characters in a field. - Ensure that the data you enter is within the limit set in Unifier; otherwise, the system will ask you to shorten the number of the characters that you had entered (message: Data entered exceeds the allowed space limit for this field in the database. You must remove few characters before submitting.). This is mainly applicable to multi-byte character languages such as Japanese, Korean, and Chinese.

Field	Description
Input Type	Select one of the options. This determines how data is entered or displayed in the field: • Pull-down Menu: users can choose a value from a selection list • Text Box: for short text entries • Multi-line Text Area: for longer text entries • Radio Buttons: users select one of multiple options presented • Checkbox: users have the option of selecting or not • Multi-select Input: users can choose one or more values from a selection list The following is applicable when deleting or otherwise modifying the options in the data definition design process, after the system has deployed the design and the data has been saved: • When you modify or delete an option in the data structure design, the system will not modify the existing record data. Consequently, within the BP logs, log preview panes, and UDRs, the system will display the option with the value that was originally saved in the record form, as read-only. • When you delete an option, the value will be displayed but not the label. • When you rename an option, or when you add the option later with the same value, the existing value will be associated with a different label, but in forms only the active options are available and only the labels (not values) will be visible. Example The value for the Priority drop-down field is set as High in the record details of a selected existing record. Based on an enhancement, you must remove this value (High) from the list of originally applicable values (High, Medium, Low). You proceed and remove High from the list of values in the record form and save your changes: Go to the Company workspace tab, and switch to Admin mode; in the left Navigator, select Data Structure Setup, select Data Definitions, and then select Basic. When you go to the BP log, preview pane, or UDRs and select that record, the system will still display the record details (in the right pane) with the value that was originally included in the Priority field (High), as read-only.
Default Value	Available for text entry fields. You may enter an optional default value to the field.
Separator	For multi-select input, where users can select one or more values to enter into a field. The separate (for example, a comma) is used to separate the values.

All the Integer-type Data Elements (DEs) will have a default value of "0" (zero). As a result, when processing an Integer drop-down list (Pull-down field), if the system finds "0" (zero) as a Data Set value, the corresponding data set value/label associated with "0" will be seen.

Example

An Integer drop-down list (Pull-down field) is named "Risk Priority."

If the Data Definition (DD) has:

1. Data Set value of "0" (zero), and the label is "No."
2. Data Set value of "1," and the label is "Yes."

Then, when a record is being created (in User mode), the value for the "Risk Priority" field will be "No" because the default value for an Integer drop-down list (Pull-down field) is "0" (zero).

View Cost Code Data Definitions

Cost Code Data Definitions are used in the Cost Manager to build the identifier for a row of cost data. Your company may refer to these as Account Codes, Cost Codes or CBS Codes. For example, these could link costs on a project/shell to the General Ledger for Finance.

CBS Codes can be built with one to a maximum of 10 cost code segments. Each segment is defined by a different data definition, so a five-segment CBS Code would require five cost code data definitions.

Cost Code values may be entered one at a time or imported from a CSV file.

To access Cost Code Data Definitions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Cost Codes**. The **Cost Code Data Definitions** log opens.

Add a Basic Data Definition

The following procedures describe how to add a Basic data definition.

To create a basic data definition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**.
3. Select **New**. The **Create New Data Definition** window opens.
4. In the **Name** field, enter a unique name for the data definition.
 - The name can include alphanumeric characters, spaces, dashes, and underscores.
 - The name is case-sensitive.
 - The name cannot begin the name with a prefix reserved by Oracle Primavera: SYS, UUU, or Picker.
5. In the **Data Type** field, specify whether the definition will be a string or integer data type. When you specify the data type, the system displays an additional field, **Input Type**.

If you choose a string data type, include the maximum number of characters in the **Data Size** field.
6. In the **Input Type** field, select the method the user will use to enter the data.
7. Select **Apply** to open the data set tab, or select **OK** to close the Create New Data Definition window.

Add a Cost Code Data Definition

To create a cost code data definition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Cost Codes**.
3. Select **New**. The **Create New Data Definition** window opens.
4. Enter a unique name for the cost code (**General** tab - **Create New Data Definition** block). The **Category** field is read only.
5. Enter a Label for the cost code.
6. Select an input type: either Text Box or Pull-down Menu.
7. Select **OK**.

Add a Data Picker Data Definition

To create a Data Picker data definition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Data Picker**.
3. Select **New**. The **Create New Data Definition** window opens.
4. Enter a unique name for the Data Picker.
5. Select the **Select** drop-down list, and select a category for the list.
6. Select the **Data Source** drop-down list, and select a source.
7. Select the **Display Element** drop-down list, and select an element. The **Data Element** field is read only.
8. Select **OK**.

The Data Picker Data Definition appears in the **Data Picker Data Definitions** log.

Adding and Managing Data Sets

Data Set Values are applicable to data definitions that provide the user with a set of values from which to choose, for example, drop-down (pull-down) menus, radio buttons, and multi-select types. Some data definitions have been supplied with data set values; others must be entered. Data Set values can be added, removed, or changed.

Some examples of Data Definitions for which data sets must be defined:

- Project/Shell Type, Project/Shell Site and Project/Shell Phase
- Discipline (for example, Architectural or Engineering; appears on some business process forms)
- Unit of Measure (appears for Line Item entry)
- Spend Category (for certain Cost-type business processes)

Add Data Set Values to a Pull-down (Drop-down) Menu or Radio Button

You can add or import data set values for data definitions that require data sets. These values are used to populate the available choices on drop-down (pull-down) menu fields, radio buttons, or checkboxes on a form or attribute form.

Note

The default values (in a drop-down list) are populated only on creation form of the business process.

A couple of things to take note of:

- If the cost code field is a text box, you can set a default value; otherwise, you cannot set a default value.
- If the data definition is an integer type and will be used in a formula, the value will be used in the formula, not the label. For integer data definitions, use care when assigning the value.
- Avoid semicolons and commas in data set values, as this can cause problems in the selection list.

To add data set values to a Data Definition (all except Multi-select Input):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic** or **Cost Codes**.
3. Select a data definition, and select **Open** (ensure that the value in the **Input Type** column is set as: **Pull-down Menu**). The **Modify Data Definition** window opens.
4. Select the **Data Set** tab.
5. Select **Add**. An editable row appears on the window. You can press the **Tab** key to move from one field to the next, or click inside a field.
6. Enter a **Value**. This value is the data that is stored in the database. This value will appear on the form if you do not enter a label.
7. Enter an optional **Label**. This is what is presented to the user as a drop-down (pull-down) menu or radio button option. This can be different from the value.
8. In the **Status** field, enter **Active** or **Inactive**. The default is **Active**. If you want the value to remain on the data set but not show up for users at runtime, you can Inactivate it, rather than remove it.
9. You can select the **Default** checkbox for *one* of the values on the data set list. This will display in the field at runtime. Selecting a default value is optional.
10. To add another row, select **Add**.
 - To insert a data set value in the middle of the list, select a value, and select **Add**. The new row will be added above your selection.
 - To add a new value to the bottom of the list, be sure a row is not selected, and select **Add**. (Or press the **Tab** key and tab through the fields of the last row, until **Add** is highlighted.)

11. If you want the data set list to be non-editable, select the **Non-Modifiable** checkbox. Select this if you do want other users to be able to alter the list. Use caution before selecting **Non-Modifiable**. After you select this checkbox, you will be able to rearrange the order and select a different default value, but you will not be able to modify or remove values from the data set.

If this option is selected by a user with create permissions, other users cannot modify the data set value list. If it is selected by a user with modify permissions, the option cannot be deselected again, except by a user with create permissions.
12. Select **Apply** to save your entries, or select **OK** to save and exit.

Add Data Set Values to a Multi-select Input Data Definition

Multi-select input type data definitions allow users at runtime to select more than one value to enter into the field at runtime. In the field, the values the user selected are separated with the Separator displayed on the **General** tab of the Data Definition window (such as a comma).

Note

Do not use an apostrophe (') in the data for a multi-select input type data definition. This can result in blank data in the selector. You cannot set a default value for this input type.

To add data set values to a Multi-select Input data definition:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Basic**. The Modify Data Definition window opens.
3. Create or open a Multi-select Input data definition, and select the **Data Set** tab.
4. Select **Add**. An editable row appears on the window. You can press the **Tab** key to move from one field to the next, or click inside a field.
5. Enter a **Value** (128 character limit). This value will appear on the form. Values can contain spaces, but cannot contain the separate value (displayed on the General tab, for example, comma).
6. In the **Status** field, enter **Active** or **Inactive**. The default is Active. If you want the value to remain on the data set but not show up for users at runtime, you can Inactivate it, rather than remove it.
7. To add another row, select **Add**.
8. If you want the data set list to be non-editable, select the **Non-Modifiable** checkbox. Select this if you do want other users to be able to alter the list. Use caution before selecting **Non-Modifiable**. After you select this, you will be able to rearrange the order and select a different default value, but you will not be able to modify or remove values from the data set.

If this option is selected by a user with create permissions, other users cannot modify the data set value list. If it is selected by a user with modify permissions, the option cannot be deselected again, except by a user with create permissions.
9. Select **Apply** to save your entries, or select **OK** to save and exit.

Import Data Set Values

If you have a large number of data set values to enter (for example, if you want to populate a State drop-down [pull-down] menu with all 50 U.S. states), you can use a CSV file to import the values. This can be done for any data definition that uses a Data Set.

Importing data set values consists of the following:

Step 1: Export the CSV template file

1. Open the Data Definition, and select the **Data Set** tab.
2. Select **Export**.
3. Save the file to your local drive. The file will contain any values that have already been entered for the data set.

Step 2: Complete the CSV file

1. Open the CSV template file.
Note there are no column headers in the template. Start at the top left corner of the file. The first column of the CSV file is the Value and the second column is the Label.
2. Delete any existing values. There cannot be duplicate values in a data set.
3. For each row, enter the Value and the Label. Include only two columns, and do not include a header row in the file. Do not add a status column; the status will be Active by default upon import.
4. Save the CSV file.

Step 3: Import the CSV file

1. Select **Import**.
2. Browse to the completed CSV file, and select **OK**.
New rows are appended to any existing entries. The system validates the import file to ensure that valid CSV format is used. Duplicate entries are not allowed. After importing, you can rearrange the order of the rows if necessary.
3. If you see an error message after importing, proceed to Step 4 below.

Step 4: View the import validation error file (if applicable)

1. If an error occurs during import and you are presented with an error message, select **Yes**. You can then choose Open to open the file or Save to save the file to your local machine before opening.
2. Open the error file, which is a CSV file. Error messages are listed next to the row in which the error occurred (for example, if you have a duplicate row).
3. You can use fix the errors in this file (for example, remove duplicate rows) and re-import it after fixing the listed errors. Be sure to remove all extraneous text, including the error messages, before importing.

Modify or Remove Data Set Values

You can edit or remove values in data set lists. When you modify an existing data set, the new values will become available when new records are created that use the field (for example, create a business process).

To edit a data set value:

1. Open a **Data Definition**, and select the **Data Set** tab.
2. Double-click the value or label to modify it. The field becomes editable. Edit the field as needed, and select **OK**.

To activate or deactivate a data set value:

1. Open a **Data Definition**, and select the **Data Set** tab.
2. Select the **Status** drop-down (pull-down) menu and choose Active to activate, or Inactive to deactivate. Select **OK**.
Inactive values do not appear on the list at runtime.

To remove a data set value from the data definition drop-down list:

1. Open a **Data Definition**, and select the **Data Set** tab.
2. Do one of the following:
 - To permanently remove a value, select it from the list, and select **Remove**.
 - To remove the value from the data definition drop-down selection list that the user is presented with, but retain it in the data set value list, select **Inactive**.
3. Select **OK**.

Reorder Data Set Values

You can rearrange the order of data set lists. When you modify an existing data set, the new values will become available when new records are created that use the field (for example, create a business process).

After you have added the data set values, you can rearrange the order of their appearance on drop-down lists, multi-select input fields, and radio buttons. You can do this in two ways:

- Using the **Move Up** and **Move Down** keys
- Changing the order of the rows by editing the **Row** column

To rearrange the order using the Move Up/Move Down keys:

1. Open the **Status Definition** window, and select the **Data Set** tab.
2. On the **Data Set** tab, highlight the data element, and select the **Move Up** or **Move Down** key until the element is in the order you want.
3. Select **OK**.

To rearrange the order by Editing the Row column:

1. Open the **Status Definition** window, and select the **Data Set** tab.
2. On the **Data Set** tab, highlight the row number of the element you want to reorder.
3. Enter the new row number the element should occupy.
4. Repeat step 2 for any other data elements you want to reorder.
5. Select **Update Order**.
6. Select **OK** to save the change and close the window.

Row Numbering follows a Relative Numerical Progression

Row numbers on the list start at 1. When you change the order of the rows, you can enter just about any number; even positive, negative, and duplicate numbers.

If you enter:

- A negative number (for example, -100): The row will move to the top, becoming row 1. If you enter two negative numbers, the "most negative" number becomes row 1, and the "next negative" number becomes row 2.
- Zero (0): The row will move to the top, becoming row 1 (or the row following any negative number you entered).
- A number greater than the existing number of rows (for example, 100 when there are only 50 rows): The row will move to the end, becoming row 50. If you enter two numbers greater than the existing number of rows (for example, 100 and 101), the sort will retain the order of the numbers. In this example, 100 and 101 will become rows 49 and 50.
- A duplicate number (that is, the same number for two or more different rows): The duplicate-numbered rows will become adjacent rows (in no specific order).

Working with Data Elements

A data element is a data field on a business process. Data Elements and their properties are defined by Data Definitions.

You can use a Data Definition to define the properties of more than one data element. Data Elements are defined under the Data Structure Setup node as well as the attribute forms.

You can export a CSV file listing specific data elements.

You can also view the usage of each data element, that is, the list of specific business processes where the data element is used.

Access Data Elements

To access the Data Elements log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Elements**. The **Data Elements** log opens.

The log lists the data elements used for your company. For each data element, the log displays the Data Definition on which it is based, the Form Label, which is how the data element appears on a form, and Usage.

Export Data Elements

You can create a CSV file containing the current list of data elements. This can be useful if you must create different combinations of data set values for Dynamic Data Sets, taking from different sources of data definition data set values.

To export data elements:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Elements**. The **Data Elements** log opens.

3. From the **Data Elements** log, select **Export**. Depending on your browser, the file will be automatically downloaded or you will be prompted to download it manually.

View Data Element Usage

The Usage button in the Data Elements log lets you view the business processes or attribute forms that the data element (DE) is being used.

To view data element usage:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Data Elements**.
3. From the **Data Elements** log, select a data element, and select **Usage**.
The Usage window displays the forms that use the data element.

Modify Data Element

When you open a Data Element in the **Data Elements** log, the **Modify Data Element** window opens. The following fields are available in this window:

- Data Element Name
- Data Definition Source
- Form label
- Description
- Tooltip
You can enter the system-level tooltip in the field.

Upper Forms:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
3. In the **Designer - Business Processes** log, select and open a BP.
4. In the left Navigator, select **Upper Forms** to open the **Forms** log.
In the **Forms** log, the **Tooltip** toolbar option enables you to see the list of Data Elements of the combined **Upper Forms**.

Detail Forms:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
3. In the **Designer - Business Processes** log, select and open a BP.
4. In the left Navigator, select **Detail Form** to open the **Detail Form** log.
In the **Detail Form** log, the **Tooltip** toolbar option enables you to see the list of Data Elements of the combined **Detail Form**.

RFB Business Process

There are four types of tooltip:

- **Requestor for Upper Forms**
- **Requestor for Detail Form**

- **Bidder for Upper Forms**
- **Bidder for Detail Form**

Other Business Processes

There are two types of tooltip:

- **Upper Forms**
- **Detail Form**

In the **Tooltip** window, select the Data Element (for example, status), select **Update from Data Element Properties** (system-level) to open the **Edit Tooltip** window, and enter the text in the field. Use the arrows (<< or >>) to move to the next Data Element (for example, title), and enter the text in the field.

You can perform bulk update from Data Element properties. In the **Tooltip** window, select **Update from Data Element Properties** to open the **Update tooltip Description** window. Ctrl+click multiple data elements to select them, and select **Update**.

Internationalization and Tooltips

All the tooltips are extracted as custom strings.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Internationalization**.
3. Select **Find** to open the **Find** window.
4. Select **uDesigner** in the **Source Type equals** field.
5. Enter "tooltip" in the **String contains** field.

Configuring Dynamic Data Sets

This flexible uDesigner option can be used on business processes and attributes forms. It allows one data element on the form to control both *values* and *behavior* of other data elements on the same form.

A dynamic data set is comprised of a "set" of data elements that includes a master data element and dependent data elements, which can be drop-down (pull-down) menus or radio buttons. The values that are available to users at runtime for the dependent fields are dependent on the selection the user makes for the master data element field. A dynamic data set can be used on business processes and attributes forms and allows one data element on the form to control both values and the behavior of other data elements on the same form.

For example, you can define a dynamic data set that includes a Country, State, City, Postal Code and Zip Code data elements that function as drop-down (pull-down) menus on a form. The Country field is a master data element. The set can be configured so that, at runtime, the user must select a value for Country, which dynamically controls the values that are available to be chosen for State. The user then selects a State, which drives the choices available for City.

Field behavior (such as required, or read-only) can also be controlled by the dynamic data set. For example, a dynamic data set might include data elements for Country, Zip Code and Postal Code. At runtime, depending on the selected value for the Country, the Zip code field may get become enabled and a required field, while the Postal Code field becomes disabled.

How to Set Up a Dynamic Data Set

Dynamic data sets are imported automatically when you import a business process or attribute form that has the dynamic data set on it.

Setting up a dynamic data set consists of the following:

1. **Prepare elements and data set values.** View dynamic data set properties to identify elements of the dynamic data set:
 - Master Data Element, which drives the behavior of the set.
 - Value Set, which lists the data elements whose values will be controlled by the master element (for example, if the master element is Country, the value set might include a drop-down [pull-down] data element State, the values of which will change depending on the country chosen).
 - Behavior Set, listing elements whose behavior is controlled by the master element (for example, a field that becomes Required, Disabled, or Disabled and Clear depending on the value chosen for the master element (for example, the Country chosen might dictate whether the Postal Code or Zip Code field is enabled for the user).

Verify that data definition data sets are populated. The data elements that can be part of a dynamic data set can be drop-down (pull-down) menus or radio buttons. The values for the selections are maintained in the Data Set tab of the data definition properties. Be sure that the individual data definitions have valid data sets. (For example, if you have a State drop-down [pull-down] data element, the data set corresponding to the data definition for the State field must be populated with the state options you want to make available to users.

2. **Define the Value Set and Behavior Set.** The value set consists of the fields whose values will be controlled by the master data element selection at runtime. The Master data element is the first element on the list. You will define the values that display at runtime. The behavior set contains the fields whose behavior (Required, Disabled, Disabled and Clear) will be controlled by the master data element selection at runtime. While **Required** contains a required text field and **Disabled** changes the field to read-only, **Disabled and Clear** clears any previous values in the field and then disables the field, making it read-only. With selecting Disabled and Clear, you avoid entering invalid data and therefore improve data entry.

Access Dynamic Data Sets

Dynamic data sets are imported into the system when a business process or attribute form on which they appear are imported.

To access dynamic data sets:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The Dynamic Data Sets log opens.

View Dynamic Data Set Properties

The dynamic data set properties and data elements are designed in uDesigner. The properties window identifies:

- Master Data Element, which drives the behavior of the set.
- Value Set, which lists the data elements whose values will be controlled by the master element (for example, if the master element is Country, the value set might include a drop-down [pull-down] data element State, the values of which will change depending on the country chosen).
- Behavior Set, listing elements whose behavior is controlled by the master element (for example, a field that becomes Required or Disabled depending on the value chosen for the master element (for example, the Country chosen might dictate whether the Postal Code or Zip Code field is enabled for the user).

To view dynamic data set properties:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The Dynamic Data Sets log opens.
3. Select the dynamic data set to edit, and select **Properties**. The Properties window opens. The Properties window is view-only.
4. The **General** tab displays the general information about the dynamic data set:
 - Name and Description
 - Master Data Element: the data element that serves as the master data element for the set
 - Data Definition: the data definition corresponding to the master data element. The data definition will be a drop-down (pull-down) menu or radio buttons. The values available for the master data element are entered in the Data Set tab for the data definition.
 - Form Label: the form label of the master data element
5. Select the **Value Set** tab. This tab displays the data elements of the value set, which are the fields whose values will be controlled by the master data element selection at runtime. The Master data element is the first element on the list. Values of each data element are based on the data set values defined under base Data Definition.
6. Select the **Behavior Set** tab. This tab displays the data elements of the behavior set, whose behavior (Required, Disabled) will be controlled by the master data element selection at runtime.

Define the Value Set and Behavior Set Values

You can add values to dynamic data sets manually one a time, or by importing multiple values from a CSV file. The following describes adding dynamic data set values manually.

Fields defined with a Value Set have values limited by the master data element. For example, a Country master data element can control the values that display for a State field.

To define the value set and behavior set combination:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The **Dynamic Data Sets** log opens.
3. Select the dynamic data set, and select **Open**. The dynamic data set log opens for the selected set.
4. Select **New**. The Add/Edit <set name> window opens.

5. Complete the window. The fields on the window will depend on how the dynamic data set was designed. It may include a *value set*, a *behavior set*, or both:
 - **Value Set:** These are the data elements that will be controlled by master data element selection at runtime. The Master data element is the first element on the list.

Select the drop-down list, and select a value for each data element. The drop-down list values are based on the data set values defined under the base data definition.

In the example in the following figure, the value set is Country and State. At runtime on the form, when the user selects a Country, the State field will populate with the states that are associated with that country. These value sets determine the combinations of Country-State that display.

- **Behavior Set:** The behavior of these data elements (Required, Disabled, Disabled and Clear) will be controlled by the master data element selection at runtime.

Select the drop-down list, and select **Required** (Field displays a *), **Disabled** (Field is read-only), or **Disabled and Clear** (Field is cleared and disabled, becoming read-only). If you leave the selection blank (or "Select" on the drop-down), there will be no change in behavior for the element.

In the example in the following figure, the behavior set is Mail Stop and Zip Code. In this case, at runtime, depending on the Country chosen, either Mail Stop or Zip Code will become a required field, or will be disabled.

6. To add another Value Set and Behavior Set combination, select **Add**, which will save the combination you just entered and let you add another.
7. When you are done adding combinations, select **OK**. The set displays on the dynamic data set log.

Data Elements that can be set as Disabled and Clear

The behavior set fields of all data types can be set as Disabled and Clear. Exceptions are mentioned below:

- Status
- Due_Date
- Creator_ID
- Record_No
- Data elements starting with "uuu"
- Data definitions starting with "SYS," and the ones not of the following input types:
 - Text
 - Textarea
 - Picker
 - Date Picker
 - Date Only Picker
 - Bitemid

Import Dynamic Data Set Values

Importing dynamic data set values consists of:

Step 1: Export the CSV template file

1. Select **Export**.
2. Save the file to your local drive.

Step 2: Complete the CSV file

1. Open the CSV template file.
2. Enter values for each column as applicable:
 - **Value set:** The columns correspond to the data elements that make up the value set. The values you enter here must match values in the data set for the data definition.
 - **Behavior set:** The behavior set column is labeled with a (B). Valid values are **Required** (makes the data element a required field), **Disabled** (the data element is read-only), **Disabled and Clear** (Field is cleared and disabled, becoming read-only), or you can leave it blank.
3. Save the CSV file.

Note

- When using a CSV template file, the following header is displayed: "For data elements that are required, enter **Required** as a value. To disable a data element, enter **Disabled** as a value. To disable and clear any previous value, enter **Disabled and Clear**. Do not enter any value if there is no behavior change needed."
- If the CSV template has restricted DEs in the behavior set and the value of **Disabled and Clear** has been set for the restricted DEs, the system prevents the import and an alert is seen.

Step 3: Import the CSV file

1. Select **Import**.
2. Browse to the completed CSV file, and select **OK**.
3. To download a CSV file containing status details of the import, select **Yes** at the prompt. The rows that you completed in the CSV file are appended to existing entries. Duplicate entries are allowed.

Delete a Dynamic Data Set Combination

You can delete a dynamic data set combination (value set and behavior set). This removes the combination from use with the dynamic data set.

To delete a dynamic data set combination:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The Dynamic Data Sets log opens.
3. Select the dynamic data set, and select **Open**. The dynamic data set log opens for the selected set.
4. Select an entry, and select **Delete**.
5. Select **Yes** to confirm.

Edit a Dynamic Data Set Combination

When you edit a dynamic data set, any changes you make will not reflect in forms. The data element must be deleted from the form and added again in uDesigner, and the form re-imported.

To edit a dynamic data set:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The Dynamic Data Sets log opens.
3. Select the dynamic data set, and select **Open**. The dynamic data set log opens for the selected set.
4. Select an entry, and select **Open**.
5. Make modifications to Value Set or Behavior Set as necessary and save.

View Dynamic Data Set Usage

You can view the forms on which a dynamic data set is used.

To view dynamic data set usage:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Data Structure Setup**, and then select **Dynamic Data Sets**. The Dynamic Data Sets log opens.
3. Select a dynamic data set.
4. From the toolbar, select **Usage**. The Usage window opens, listing the forms on which the dynamic data set is used.

Setting Up Multiple Company Calendars

The system supports multiple calendars, which lets you create a library of calendars that can be selected for use at the company, shell, and project levels. The multiple calendars let you have calendars to support varying work schedules (depending on locality) and to account for holidays and other non-working days. For example, some countries in the Middle East have weekends that are other than Saturday and Sunday. Unless otherwise specified, the default calendar for a project/shell is the Company calendar that is designated as the default calendar. The calendar selected affects project/shell durations and due dates.

The calendars can be used in project/shell templates, and are automatically applied when the template is updated. Also, users can create activity calendars to use in schedule sheets, specific activities in schedule sheets. Calendars also affect business process task due dates, workflow due dates, and formula calculations.

Step 1: Set permissions for multiple calendars. Grant permissions to allow the configuration of company-level multiple calendars. See [Setting Multiple Calendar Permissions](#).

Step 2: Create and manage calendars (create, copy, modify, delete, set as default). See [Creating Multiple Calendars](#) and [Modify, Delete, or Mark a Calendar as Default at Company Level](#).

Setting Multiple Calendar Permissions

You must have permissions granted to be able to create, modify, or view the calendars.

To set multiple calendar permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Standards & Libraries**, and then select **Calendars**.
4. Set the permissions as needed:
 - **Create:** Users can create, modify, view, delete, mark as default. These calendars are known as Standard Calendars.
 - **Modify:** Users can modify and view Standard Calendars.
 - **View:** Users can view existing Standard Calendars.

Creating Multiple Calendars

You can create a calendar and use it as the standard calendar at the company level, shell level, project level, template level, activity level, and business processes.

There is a default company calendar available titled: **Company Calendar (Default)**. You can:

- Use the default calendar as the standard calendar.

- Use the default calendar to create a standard calendar.
- Copy an existing calendar and modify it to create a calendar that can be used as a standard calendar.
- Create a custom calendar.

You must have **Create** permission to be able to create standard calendars.

To create a standard calendar at company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select **New**. The **Calendar Properties** window opens.
4. Enter the calendar name and an optional description.
5. Modify the working and non-working days that are specific to the new calendar you are creating. Select the calendar day, and select the **Working** or **Non Working** options as needed, and then set the **Start Time** and **Hours/Day**. By default, the standard calendar will have Saturdays and Sundays marked as non-working days, and the Default Work Time will have a Start Time of 08:00 AM with 8 hours per day. For more information about modifying the calendar days and Default Work Time, see [Modify, Delete, or Mark a Calendar as Default at Company Level](#).
6. Select **OK**.

To copy an existing calendar at company level:

1. Go to the **Company Workspace** tab.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select a calendar in the log.
4. Select **Copy**. The **Calendar Properties** window opens with the calendar description and calendars days specified.
5. Enter the calendar name and change the optional description as needed.
6. Modify the working and non-working days that are specific to the new calendar you are creating, as well as the Default Work Time.
7. Select **OK**.

Modify, Delete, or Mark a Calendar as Default at Company Level

You can modify a standard calendar if you have **Modify** permission. You can delete a standard calendar if you have **Create** permission. If you use a calendar in a project/shell, schedule sheets, or schedule sheet activities, and you are asked to replace the calendar, you can delete the existing calendar and replace it with a new one. You can also specify a default standard calendar if you have **Create** permission. Unless otherwise specified, the default calendar for a project/shell is the company calendar that is designated as the default calendar.

Note

The calendar selected affects project/shell durations and due dates.

To modify a calendar at company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select the company calendar, and select **Open**. The **Calendar Properties** window opens.
4. Modify the calendar name and change the optional description as needed.
5. Modify the working and non-working days that are specific to the new calendar you are creating. Select the calendar day, and select the **Working** or **Non Working** options as needed.
 - a. To change a particular date from a working to a non-working day, select the date cell to highlight it, and select **Non Working**. You can select multiple dates. This change impacts the months individually and does not impact the rest of the calendar or subsequent years.
 - b. To change Saturdays and Sundays from non- working days to working days, select the day cell (for example, "Sat") to highlight it, and select **Working**. This will make all Saturdays, or Sundays, of the calendar as working days, including subsequent years. In this scenario, you can select individual dates under Saturdays or Sundays and mark them as non-working dates.
6. Select **OK**.

To delete a calendar at company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select one or more calendars in the log.
4. Select **Delete**. If a calendar is not in use, it is deleted. If a calendar is in use, the **Select a Calendar** window displays to let you select a replacement calendar. Select an alternate calendar, and select **OK**.

 Note

You cannot delete calendars that are used by view-only projects/shells.

To specify a default calendar:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select a calendar in the log.
4. Select **Default**.

To change working and non-working days on a calendar at company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select a calendar, and select **Open** to open the **Calendar Properties** window.

- a. To change a particular date from a working to a non-working day, select the *date* cell to highlight it, and select **Non Working**. You can select multiple dates. This change impacts the months individually and does not impact the rest of the calendar or subsequent years.
- b. To change Saturdays and Sundays from non- working days to working days, select the *day* cell (for example, "Sat") to highlight it, and select **Working**. This will make all Saturdays, or Sundays, of the calendar as working days, including subsequent years. In this scenario, you can select individual *dates* under Saturdays or Sundays and mark them as non-working *dates*.

A non-working date appears grayed out, and it will not be used in date calculations.

To change default work time on a calendar at company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Calendars**. The **Calendars** log opens.
3. Select a calendar, and select **Open** to open the **Calendar Properties** window.
4. Enter values for the **Start Time** and **Hours/Day** fields.

Setting Up Business Processes

Information is entered and stored using electronic business process forms and routed via configurable workflows. Business processes—and their workflows, logs, and even search parameters—can be created and designed in uDesigner. They are then imported into Unifier, configured for use, and set up for use in specific projects/shells or the company workspace.

Setting up business processes for use consists of the following steps:

1. Import and deploy business processes. See [Importing Business Processes](#).
2. Configure the BPs to be set up for use. See [Configuring and Activating a BP](#).
3. Set up the BPs for use at the company-level or in individual projects/shells. For workflow BPs, you can create multiple setups that let you use the same BP form with any number of customized workflows.

For more information, see [Setting Up Non-Workflow Business Processes](#) and [Setting Up Workflow Business Processes](#)

4. Grant User mode permission to all users (including yourself) who will need to view records or participate in a workflow.

Note

Not all BPs work in all areas of the system. For a table that lists all available BPs and the areas in which they are available for use, see [Business Process Functionality](#).

Master Log - Business Processes Node

The **Master Log - Business Processes** node is located in the **Home** workspace. The node lets you access all or a subset of records of the same type, in a single log that spans multiple projects/shells. The node also lists all business process types at the project/shell level in separate nodes for each type. This includes workflow, non-workflow, and multiple record business processes.

Note

The company-level and Single-Record business processes (BPs) are not listed under the **Master Log - Business Processes** node. Single-Record BPs are listed in the **General** section under **Information** in the left Navigator. You can also update the **User Mode Navigator** to list Single-Record BPs under the **Home** tab.

For example, your company might have a shell hierarchy of buildings. A dispatcher who is responsible for translating service requests into work orders could use the **Master Log - Business Processes** node to create and edit work order records for any building shell from a single, "master" log, rather than drilling into each building shell to access the records.

The **Master Log - Business Processes** node can also be filtered to display only certain records. For example, a regional Lease Manager might need to access all the active leases in the system that have lease amounts greater than \$50,000 per year. Using the filter feature, the lease manager could display only these leases in the Master Log.

Note

If you do not grant users the permission to view or access any of the business process types listed under the **Master Log - Business Processes** node, the users will not see the **Master Log - Business Processes** node in the **Home** tab.

Setting the Master Log - Business Processes Node Permissions

You must give explicit permission(s) to users to access the **Master Log - Business Processes** node. You can grant permissions for users to access all business processes in the Master Log, or to individual business process types. To view business process records, users must also:

- Be an active member in the project, shell, or sub-shell
- Have access to at least one business process in the **Master Log - Business Processes** node

All project/shell business processes in the system (except inactive and single-record BPs) are listed alphabetically in their corresponding **Master Log - Business Processes** node.

To set permissions for **Master Log - Business Processes** node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Home**, expand **Master Log - Business Processes**, expand **All**, and select the applicable **<business process>**.
4. Set the permissions as needed:
 - **Allow Bulk Creation:** Users can create BP records across projects/shells using Microsoft Excel and import their data into projects. Records of only Simple and Generic Line Item BPs are supported.
 - **View:** Users can view all business process records across all projects and all records in the shell hierarchy (subject to their highest level of shell membership in the hierarchy) independent of whether they are assignees on or have permissions to view and manage individual records within a particular project/shell. These users can also view saved searches.
 - **Allow Bulk Edit:** Users can select one or more records within a Master Log and perform Bulk Edit on business process records. Selected records can potentially span across multiple projects/shells. Users having this permission automatically have View permissions.

Single Record Business Process in the Master Log - Business Processes Node Permissions

In the Master Log, you can assign the **View** and **Allow Bulk Edit** permissions to Users and Groups for a single record business process.

To assign permissions:

1. Go to the **Access Control** functional node.

2. In the **Access Control** window, expand **User Mode Access**, expand **Master Log - Business Processes**, and select **All**.
3. Select **Project Configuration** to open the permissions setting window.
4. Add Users or Groups, if needed, and select one or both of the following permissions:
 - **Allow Bulk Edit**
 - **View**

Setting Permissions to Create Business Process Records Across Projects/Shells

In the **Master Log**, you can set the **Allow Bulk Creation** permission for users to create records for the following types of business processes across projects/shells:

- Simple BPs
- Generic Line Item BPs

To assign permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Home**, expand **Master Log - Business Processes**, and then select the applicable **<business process name>**.
4. In the **Module Permissions Settings** window of the selected business process, select the user to be assigned the permission, and select **Modify**.
 - a. In the **Permissions Settings** section of the **Permission/Access Control** window, select **Allow Bulk Creation**.
 - b. Select **OK**.
5. Select **OK** in the **Module Permissions Settings** window.

Alternative Methods

You can also set the **Allow Bulk Creation** permission from the following tabs:

- Group Permissions tab. For more information, see [Edit Group Permissions \(Permissions Tab\)](#).
- User Permissions tab. For more information, see [Editing User Permissions \(Permissions Tab\)](#).

Additional Information about Single Record BPs in the Master Log

The system will maintain the shell-level BP permissions, when displaying the single record BPs in master log.

Based on the list at the shell level, you can:

- Edit the records that you have created.
- Edit the records that you are the record editor of.
- Select multiple single record BPs in the master log, select **Bulk Edit (Actions options)**, and see all the DEs that have been defined in the **Integration tab** with direction set as Both.
- Edit multiple DEs in the **Bulk Edit window**, and select Update. Note that this causes all the selected DE values to be updated, across all projects/shells.

Advanced Logs and Standard Logs

For Business Processes, Shells, the Space Manager, and Code and Records-based managers, you can design either a Standard log or an Advanced log for display in Data Pickers. An Advanced Log creates an extra navigation structure that makes it easier for the user to choose records to work with.

Note

The default elements and fields (log layout, view, search, and so on) that are defined in uDesigner for the Standard Log determine the Standard user interface elements and fields of all logs.

Importing Business Processes

All designs, including Business Processes, are designed in uDesigner and deployed to Unifier. See [Importing Configuration Packages](#).

Configuring Business Processes

Business process configuration lets you configure and activate the company-level information for each business process you will use. After business processes are deployed, they are available for use. Configuring allows activation of the business process and specific workflow schema that can be used in projects/shells or the company level.

Configuration consists of:

- Activating or deactivating a BP (deactivating an active BP will also deactivate all its setups)
- Determining which BP log the BP records will be stored in (for example, project logs, shell logs, company logs, Data Manager, and so on)
- Establishing the BP record numbering sequence
- For workflow BPs, activating the workflows that will be allowed for use with the BP
- Creating a custom-designed print layout that can be used to print BP records
- Assigning a predefined category tag to a BP for more useful, insightful reports, dashboards, and data visualization
- Enabling AI Summarization (cloud only)

Note

Configuration of the Data Picker and Data Elements (and when applicable: Unique and Auto Sequence settings) must be done in uDesigner.

To access the Business Process configuration log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Configuration**, and then select **Business Process**. The **Configuration - Business Processes** log opens. The log lists the Business Processes that have been imported into the system.

The newly imported Business Processes are inactive by default and are activated during configuration. The ID column shows the short code used to identify the Business Process, as defined in uDesigner. During configuration, you can choose to include this identifier as part of the record number (for example, if a BP has an ID of `uaici`, individual record numbers created for the BP might be `uaici-0001`, `uaici-0002`, and so on).

Configuring and Activating a BP

The following procedure describes how to configure and activate a business process (BP). If the business process form contains a data picker, you must also configure the data picker.

To configure and activate a BP:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**. The **Configuration - Business Processes** log opens. The log lists the Business Processes that have been imported into the system.
3. Select a BP, and then select **Open** to go to the **Configuration - <BP NAME>** window of the selected BP.
4. In the **Configuration - <BP NAME>** window, select a record, select **Open**, and enter values in each tab as described below.
 - **General** tab: In this tab, you can specify the log in which the BP records will appear, the numbering sequence for the records, the status, and record termination restrictions. The tab also shows whether the BP is company, project, or shell level.
 - **Workflow** tab: In this tab, which is only visible for workflow BPs, you can activate one or more workflows that have been imported with the BP. A business process may have multiple workflows. Non-workflow BPs will not appear in this tab.
 - **Query** tab: In this tab, you can set query and refresh conditions.
 - **AI Summarization** tab: (cloud only) In this tab, you can enable a BP for summarization, select the data elements (DEs) that should be available for summarization by your end users, select DEs to use by default, and indicate how the DEs should be grouped. Even if the feature is disabled at the company level, you can still configure summarization if the BP design supports it.

The system supports DEs of the following data definition (DD) types:

 - Currency
 - Decimal
 - Multiple Text Lines
 - Pulldown
 - SYS Rich Text
 - Text Box (regardless of Data Size)

The system only supports Pull Down DEs as grouping elements.

The following topics explain the fields on the preceding tabs:

- [Completing the General tab](#)

- [Configuring a BP Workflow \(Workflow Tab\)](#)
- [Completing the AI Summarization tab](#)
- [Configuring a Query for a Query Based Data Element on a BP](#)

Completing the General tab

Use the following procedure to complete the fields on the **General** tab of the **Configuration - <BP NAME>** window. Some of the fields that appear depend on the type of BP that you are configuring. For example, the **Mobile Application** option does not appear for BPs of type: Lease, Line Item with CBS and WBS Codes, Payment Application, Project/Shell Creation, Request for Bid (RFB), Reservation, Resource Booking, or Timesheet.

To complete the **General** tab:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. Open the applicable BP.
The Configuration - <BP NAME> window displays the General tab by default.
4. Select the **Level** at which the BP displays, **Company** or **Project/Shell**.
5. For **Default Location**, choose where the BP records are stored.
Some BP types will default to a log and cannot be changed.

If you are using the user configurable Navigator, you might not immediately see the BP in the User Mode log, even after granting permissions. You must manually move the BP into the correct User Mode node.

6. Select the **Sequence Policy**, which determines how the record numbers for each BP record are sequenced.
The record number is displayed on the form and in the Business Process log.
 - **Company Based:** Regardless of which project a BP record is created in, the record numbering sequence starts with this number on the first record of the first project/shell.
 - **Project/Shell Based:** A new record numbering sequence begins for each new project/shell.
7. Specify a **Sequence Format** and starting number (**Start**) to use for BP record numbers.
If you are working on a BP that supports it, you can select the **Use Base Commit's Record Number** checkbox instead and specify a **Separator** and **Start**. This option is for identifying workflow Change Commits (Line Items with CBS Code Cost BPs) at the project/shell level. For this type of change commit, you can use the base commit record number as part of the prefix of the change commit record number to identify the base commit associated with the change commit. It will also sequentially number the change commits so that users can see how many change orders have been initiated for the base commit.

To specify this addition to the prefix number, you must include a separator, such as a period, and a starting number for the change commits. The maximum number of characters for the starting number is 8. For the total format, including the base commit's record number and the sequential numbers, the maximum number of characters is 20.

For example, a base commit record might be numbered PO-00123456. For a change commit record that refers to this base commit, the change commit record number could be PO-00123456, followed by a separator (such as -) and a number for the change commit. The sequence format for change commits attached to this base commit could be numbered:

PO-00123456-001

PO-00123456-002

PO-00123456-003

This numbering sequence will be frozen after it is used for a change commit in a project/shell. Any change to this numbering sequence only affects change commits created in a new project/shell.

8. For **Business Process Log**, select **Standard** or **Advanced**.
If Standard is the only available log, the option is selected by default.
9. From the alphabetized **Business Process Identification Tag** list, which is shared across all BPs, select one predefined identifier tag to assign to a BP.
The tag categorizes and organizes the BP data for use in reports, dashboards, data visualizations, and artificial intelligence (AI) features.
10. For **Record Creator**, select any of the following options:
 - **Do not allow to terminate record:** Selecting this option removes the default permission for the record creators, and it can be set in Access Control.
 - **Allow to modify record:** This option displays only if you are setting up a workflow business process (BP). Selecting this option lets the creator of a workflow BP modify the record at any time, whether or not the creator is an assignee on the step. Additionally, the creator can modify the record while an assignee is working on the record.

Note

Updates made and saved by the creator can be viewed at any time. The system lists all changes in the audit log.

- **Do not allow to transfer ownership of records:** Selecting this option removes the default permission for the record creators, and it can be set in Access Control.
11. If you want users to view audit-log entries for print and discover the number of times that a record has been printed, select **Enable audit of record print**.
When you select this option, which is deselected by default, the following user actions on a record will create an audit entry:
 - Printing from BP record
 - Single & Bulk Printing from the BP log
 - Single & Bulk Printing from the Tasks log

For bulk print, the number of entries listed in the audit log matches the number of records that were printed by way of the bulk print action.
 12. For **Mobile Application**, select **Enable** to make this business process available for the native mobile apps.
You can use the Mobile Log Views setup to configure customized log views. After selecting this option, the following options are available:
 - **Allow camera as the only source for attachments and image fields:** For BP record and BP line item attachments, this option is applicable only when "My Computer" is a source of attachments. When selected, the user will only be allowed to take pictures from the device camera and add them as attachments and images in the image picker fields.
 - **Allow auto filling of the latitude and longitude upon record creation:** If you want the mobile application to complete the latitude and longitude fields automatically during record creation, select this option.

13. For **Email Notifications**, select **Replace attachments with links** if you anticipate that the BP records and the BP line item attachments might be large in size. To reduce the load on email server and accommodate to maximum email size, the user receives the links to the attachments in the email. The user must log in to view and download the attachments. If **Replace attachments with links** is selected, no attachments or download links will be included in email notifications sent to contact list users. For more information about Email Notifications and Unifier users, see [Email Notifications and Users](#).
14. For **Document Publishing**, select **Override DM Permissions** if you want to enable users to publish the attachments in a BP by overriding its Document Manager permissions.
15. For **Status**, select **Active** to enable the BP for setup and use in creating BP records, or select **Inactive** to prevent setup or use.
16. To save your changes before continuing to the next section, select **Apply**, or select **OK** to save your changes and close the **Configuration** window.
 - To complete the **Workflow** tab for BPs that use a workflow, proceed to [Configuring a BP Workflow \(Workflow Tab\)](#).
 - To complete the **Query** tab for BPs that include Query Based Data Element (QBDE) entries, proceed to [Configuring a Query for a Query Based Data Element on a BP](#).
 - To complete the **AI Summarization** tab for BPs that support AI Summarization, proceed to [Completing the AI Summarization tab](#).

Email Notifications and Users

The following functionalities are applicable to the following users:

- Standard Users
- Portal Users
- Collaborator Users

Note

The user must have the appropriate permissions to access attached files.

1. For BPs that have the **Replace attachments with links** option enabled, the email notification will contain an organized list of attachment names (related to their origin) derived from the BP upper form, or the BP line item.
2. The attachment name:
 - Contains an underlying unique link that enables the user to navigate through the system and access the corresponding attachments.
 - Shows the file size beneath the name.
3. In the email notification the attachment names are listed in three columns, per row. The system will truncate any attachment name that exceeds the allocated width of the column (suffixed by ellipsis before the extension name so that extension name is evident to user). The user can hover over the attachment to see the full file name.
4. The system displays the list of attachments after the email notification content.
5. The **View in Unifier** option in the email notification contains a link that redirects the user to Unifier and opens the task or BP record. All email notifications have the **View in Unifier**

- option. The **View in Unifier** option redirects the user to Unifier, and, after the user has signed in to the system, will open the associated BP record. If the user has already signed in, selecting the **View in Unifier** option would open the associated BP record.
6. The Download All Attachments option enables the user to download all the attachments together and at once. You can close the Your download is being prepared window and continue working. The download is triggered after it is prepared in the background. The delay is to accommodate the processing of the zip file. The zip file has the files organized. Therefore, the root folder has all the record attachments, and each BP line item attachment is in separate folder with the folder name being the name of line item tab name.
 - If the user logs out before the download is initiated, the download preparation is canceled.
 - If an attachment is deleted after the email notification has been sent, the attachment will not be included in the zip file, if the name of the zip file is the same as the one that is attached to email notifications.
 7. The system will use the current permissions, and the BP configuration, for the signed in user.
 - If the permissions are changed after the email notification has been sent, the user will not have the permission to download any attachments.
 - If the permissions are changed to 'download only a few files,' the "Download All Attachments" option will only include the files that the user has permissions to download.
 - If the permissions for the BP record are changed, the system redirects the user to the landing page and does not open the BP record.
 8. If the user has set up a daily digest for the email notifications, then:
 - Email notifications from the BPs that have the **Replace attachments with links** option enabled will have attachment links.
 - Email notifications from the BPs that do not have the Replace attachments with links option enabled will not have attachment links and instead will contain the raw file as the attachment.
 - If the daily digest email size exceeds the limit, the attachment links are retained while the raw files are replaced with a warning message.
 9. As a result of the BP setup at a project level or a shell level and the user preferences:
 - For workflow BPs:
 - If the **Include both record and line item attachments** option (in the BP configuration) is enabled, the option will be selected, before every notification-triggering event.
 - Every email notification that has been sent to the user based on the user's preferences will have the "Include both record and line item attachments" option (in the BP configuration) selected.
 - For non-workflow BPs:
 - If the **Include both record and line item attachments** option (in the BP configuration) is enabled, the option will be selected, before every notification-triggering event.
 10. After the user selects Download and signs in to the system, the user will be redirected to the **Downloading Email Attachment Landing Page**. The landing page opens in a new tab when a session is active.

Note

If you are not signed in to Unifier, the system will redirect you to the Unifier sign in page when you try to download an attachment.

Configuring a BP Workflow (Workflow Tab)

Workflow business processes may have one or more workflows, which, along with the BP settings, control how BP records flow through the steps of the creation, response, review, and approval process. Workflows are designed in uDesigner and included with the BP. You must activate the workflows that you plan to set up and use.

Note

This is applicable for workflow BPs only. Non-workflow BPs will not display this tab.

To configure and activate a workflow:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. Open the applicable BP.
4. In the **Configuration - <BP NAME>** window, select the **Workflow** tab.
5. To activate a workflow, select the workflow, and select **Activate**. Alternatively, you can select a workflow, and select **Modify**. The **Workflow Configuration** window opens.
 - In the **General** tab, you can edit the name or description if necessary.
 - You can change the status to active in this tab.
 - To view the steps of the workflow, select the **Step** tab.
 - Select **OK** to exit the **Workflow Configuration** window.
6. If you have edited or added a workflow to an existing business process and re-imported it, select **Add** to add newly defined workflows.
7. To save your changes before continuing to the next section, select **Apply**, or select **OK** to save your changes and close the **Configuration** window.
 - To complete the **Query** tab for BPs that include Query Based Data Element (QBDE) entries, proceed to [Configuring a Query for a Query Based Data Element on a BP](#).
 - To complete the **AI Summarization** tab for BPs that support Records Summarization, proceed to [Completing the AI Summarization tab](#).

Configuring a Query for a Query Based Data Element on a BP

You can configure a query for a Query Based Data Element (QBDE) on a business process (BP). The QBDEs give you the ability to query data from BPs and manager sheets and display the results on a BP. For example, you can create a small cost report on a BP. This reduces referring back to the cost sheet while a user is working in the BP.

When a QBDE is added in a BP form, you can define the query on which the element gets refreshed (trigger element).

Example

Go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **uDesigner**, and then select **Business Processes**. Open the **Action items** BP, and then select **Upper Forms** in the left Navigator.

Add a QBDE in an Upper Form of a BP and deploy it.

Go to the **Configuration** tab, select **Business Process**, and then select **Required BP** and open it to see the **Query** tab.

During configuration for each QBDE (up to five per BP), you can define a query formula and any conditions that will filter query results. For example, if you want to see the total project commitment, which includes the original commitment amount plus any changes to the original commitment, you can build a query formula to show that value from the cost sheet. You may limit, or filter, the query results by adding a condition. You can also define the refresh condition that will prompt a data update for these QBDEs. When a user opens the BP, the system looks at the refresh condition to determine if it can display the last calculated value or values in the BP. If you need the QBDE to recalculate after a user opens a form but before submitting the record, you can use a trigger element. In uDesigner, under the data element properties of the QBDE, you can select one or more trigger elements. If the user updates the value of any data element specified as a trigger element, the QBDE will recalculate.

Note

- Because the system does not provide a way to specify the order of operations applied in QBDE evaluation, Oracle recommends that you do not create a QBDE that uses a formula that references another QBDE.
- DEs that have been defined as a QBDE trigger element should not be evaluated as part of QBDE calculation.
- This feature is not available for a single-record business process at the company level.
- The difference between a refresh condition and a trigger: A refresh occurs when a user opens a business process. A trigger works when the BP is already open and a user changes a value in a "trigger element" on that BP form. The trigger element prompts the system to run the query again and dynamically update the value in the query-based field.
- When using QBDE, be aware that query elements are rounded off to use two decimal places, even if the Base Currency and various defined currency fields are different.

To configure the query:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**. The Configuration-Business Processes log opens, displaying the BPs that have been imported into your company.
3. Select the business process that contains the query-based data element, select **Open**, and go to the **Query** tab.

4. Under **Query Conditions**, select **Add**.
The Define Query window opens. The Define Query window shows two sections, a **Definition** section and a **Condition** section.

Fields in the **Definition** section:

- **Data Element**: Select the data element you want to configure. The list shows only the query-based data elements on the form.
 - **Data Type**: Select the source from which the system will extract the values (for example, a column in the CBS Cost Sheet or a business process).
 - **Datasource**: Click **Select** and on the Formula Creation window that appears, build a formula to calculate the value you want to see in the field on the BP form. For information on creating a formula for a query, see [Queries](#).
5. To specify a condition to filter the data that is extracted by the definition and refine the condition further:
 - a. Select **Add**. The **Add Query Condition** window opens.
 - b. Use the instructions under About Queries to complete the query condition.
 - c. Select **OK**.

Note

Query conditions ignore the Timestamp for Date-type data elements. Therefore, at run-time, when queried on a date picker, search results display records that satisfy only the date criteria. For example, all records updated on April 10, 2024 display, regardless of the time they were updated.

6. On the **Define Query** window, select **OK**.
7. On the **Query** tab of the **Configuration** window, under **Refresh Conditions**, select **Add**.
8. In the **Refresh Condition** window, complete the following:
 - **Data Element**: Select the data element you want to prompt the field refresh.
 - **Condition**: Select the condition this data element must meet to prompt the refresh.
 - **Values**: Enter or select the value this data element must contain to prompt the refresh.
9. To save your changes before continuing to the next section, select **Apply**, or select **OK** to save your changes and close the **Configuration** window.
10. To complete the **AI Summarization** tab for BPs that support AI Summarization, proceed to [Completing the AI Summarization tab](#).

Completing the AI Tab (Cloud Only)

Use the **AI** tab to enable specific business processes (BPs) with AI features and make them available to your users.

Records Summarization is available for the following types of business processes (BPs):

- Cost
- Line Item
- Simple

You can select data elements (DEs) that you want made available in the Upper Form of the BP for records summarization. By doing so, you can help ensure DEs that are confidential or are not meant to be used for record summaries are not made available for selection by users.

Note

Even if the feature is disabled at the company level, you can still configure summarization if the BP design supports it.

The following data definition (DD) types are subject to selection:

- Multiple Text Lines
- Text Box (regardless of Data Size)
- SYS Rich Text
- Pulldown
- Currency
- Decimal

Invoice Data Extraction allows your users to scan and upload Invoice PDFs to create Classic Payment Application BP records with a populated Upper Form and relevant line items.

Procedure

To configure BPs with specific AI features, complete the fields on the **AI** tab of the **Configuration - <BP NAME>** window.

Note

Even if you configure the **AI** tab for specific BPs, the feature is not available for users until you enable it at the company level. For more information, see *Updating Company Settings on the AI Tab (Cloud Only)*.

To complete the **AI** tab:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. Open the applicable BP.
4. In the **Configuration - <BP NAME>** window, select the **AI** tab to enable any of the following features:
 - To generate AI-assisted record summaries:
 - a. In the **Records Summarization** area, select the **Enable** checkbox.
 - b. For **Available Data Elements for Summarization**, choose **Select**.
 - c. On the **Data Elements From Upper Form** dialog box, select the applicable elements, and then select **OK**.
The elements that you select here determine which elements you can choose from in the next steps.

Note

If you subsequently remove any of the selected DEs that your users have included in a summarization, one of following scenarios occurs:

- If the summary contains other valid DEs, the summary is created or updated using the remaining DEs but omits the removed DEs.
- If the summary no longer contains any valid DEs, the selection is reset to the default settings you provide.

- d. For **Default Data Elements for Summarization**, click **Select**.
 - e. In the **Data Elements From Available Data Elements for Summarization** dialog box, select up to five elements, and then select **OK**.
If you selected multiple elements in the **Available Data Elements for Summarization** field, users have the option to select a different grouping element when they perform summarization. If you do not select an element, the system applies a logical grouping.
 - f. From the **Summarization Grouping Element** list, select the element that should be used as the default.
 - g. To enable summarization from the **Master Log - Business Processes** node, select the **Enable Summarization from Master Log** checkbox.
 - To use AI to auto-fill classic Payment Application BP records from uploaded Invoice PDFs, select the **Enable** checkbox in the **Invoice Data Extraction** area
5. When you are finished, select **Apply** or **OK**.

Creating BP Log Views, BP Mobile Log Views, and QBT Log Views in Admin Mode

Log views are views which drive the content and behavior of the BP logs at runtime. Administrators can create customized default log views that meet the requirements of the company and users.

To access log views for a business process:

1. Go to the **Company Workspace** tab and switch to **Admin** mode.
2. In the left Navigator, select **Configuration** and then select **Business Process**.
3. In the right pane, select and open the applicable business process.
4. In the left Navigator, select the **Log Views** or **Mobile Log Views** sub-node.
The following information displays for each log view record:
 - **Name:** The name of the view.
 - **Status:** Displays whether a view is currently **Active** or **Inactive**. However, the status of a QBT Log view is always set to **Inactive** by default to prevent it's use as a standard BP log view.
 - **QBT Log:** Indicates **Yes** if the view is designated as a query-based tab (QBT) log. Use this view for BPs that have a QBT defined in their referenced business process.

- **Last Modified Date:** The date that the view was last modified. For a new view, this will be the creation date. This field is initially blank for existing system-defined views that have not been modified.
 - **Last Modified By:** The name of the user who last modified the view. This field is initially blank for existing system-defined views that have not been modified.
5. Use the following toolbar icons to perform any of the following tasks:
- To create log views, select **+ Create**.
 - To activate, reorder, or delete inactive log views, select **Manage Views**.
 - To refresh the list of log views, select **Refresh** (🔄).
 - To locate a specific view on the displayed page, select **Find on Page** (🔍).
6. To perform any of the following actions, right-click on a record in the **Log View** and select the gear menu (⚙️):
- Reorder the BP log views by selecting **Move Up** or **Move Down**.
 - Change the status of a BP log view by selecting **Active** or **Inactive**. At least one BP log view must be active.
 - Identify the BP log view or mobile BP log view to be used to view records displayed in a query-based tab by selecting **QBT Log**. Only one view can be designated as the QBT Log view. The status of the QBT Log view will be set to Inactive to prevent it from being used as a standard log view.
 - If a QBT log or a mobile log view is not defined, the BP log from uDesigner will be used for QBT.
 - Delete an inactive log view by selecting **Delete**.

Creating or Accessing Log Views in User Mode

To access the Log Views node or create log views for a business process in the **User** mode, users must have the Configuration permission.

When users configure Business Processes (BPs), they can also create log views for the BPs in the projects they have access to at the project level and company level. The views defined for the BPs are applicable to both BP logs and the Master Log - Business Processes log.

① Note

- Users cannot create two BP log views with the same name for a single BP.
- When a user changes the sequence of the BP log views that were initially provided according to the BP configuration, the user's sequence is retained even if the administrator makes changes to the sequence.

BP Log Views at Runtime

BP Mobile log views are a part of BP configuration. Only active views will be seen at run-time. All active views pertaining to a mobile-enabled BP can be seen by all users who have access to the log.

BP Log Views and Configuration Package

Administrators can include designs for selected log views in configuration packages.

To add BP log views in a configuration package:

1. Go to the **Company Workspace** tab and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management** and then select **Component Lists**.
3. Open the applicable **[configuration]**, and then select **Log Views**.

In the component list of a configuration package, you can include:

- BP log views and deployed designs
- Updated BP log views with no changes to the underlying columns used in the View definition

When the configuration package is imported, it replaces any existing BP log views that were created by the administrator. The BP log view component will be also included in the impact analysis report, error report, and print report.

BP Mobile Log Views and Configuration Package

Administrators can include designs for selected log views in configuration packages.

To add BP mobile log views in a configuration package:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Component Lists**.
3. Open the applicable configuration.
4. In the right pane, locate **Mobile Log Views**.
5. Use the **Mobile Log Views** node to include the designs for the selected log views in your configuration package.

In the component list of a configuration package, you can also include:

- BP mobile log views and deployed designs.
- Updated BP mobile log views without any changes to the underlying columns used in View definition.

When the configuration package is imported, it replaces any existing BP mobile log views that were created by the administrator. The BP mobile log view component will be included as part of the impact analysis report, error report, and print report.

Configure Pickers in Admin Mode

The information in this topic applies to the following pickers:

- BP Picker
- CBS Picker
- CM0 Picker
- CMx Picker

Note

Each class of CMx picker can have its own query conditions.

- Funding Picker
- WBS Picker

If the picker Data Element (DE) is added on the BP form, you can also configure the query condition on the picker Data Definition (DD) to restrict the visibility of available data at runtime.

As an administrator, you can:

- Configure query condition on picker DE to restrict the visibility of available data at runtime.
- See whether any query condition is added.
- Perform the following actions:
 - Add new query condition
 - Modify/delete existing query
 - Apply And/Or condition
 - Add a query based on different data selection to filter data that needs to be available at runtime
 - Change And/Or conditions among different queries
 - Save so that only saved changes are applicable and data is filtered based on saved queries or cancel changes made in query conditions
 - See a list of all available picker attributes in the required DD field, on the **Add Query Condition** and **Modify Query Condition** windows. This lets you select an attribute value from the drop-down (pulldown) menu to apply the condition on.
 - See a list of all available options for the required Condition, field based on the DD field value on the **Add Query Condition** and **Modify Query Condition** windows, while adding or modifying a query condition. This lets you select the appropriate condition to apply between the DD and values.

Note

To define a query condition, you can use the BP Picker, Date Picker, and Date Only Picker. No other pickers are supported. Also, you cannot use the cost code and cost attribute pickers in the query condition. The query conditions you define with the BP Picker only return data sourced from the shell you specify. The query does not return values from other projects/shells.

- Select the value (**Value** field) as **Dynamic** or **Constant**, if the DD and the **Condition** fields have values on the **Add Query Condition** and **Modify Query Condition** windows, while adding or modifying a query condition. This is so you have a choice to:
 - * Define that a comparable value will be provided at runtime, based on the **Data Source** selection, or
 - * The value can be a constant value.

The system compares the DE value against a given or selected constant value and filters the data based on the defined condition at runtime.

- Have different options (such as **Cancel**, **Add Another**, and **Add** or **Update**) while adding or modifying a query condition. You can select:
 - * **Cancel** - to cancel the changes
 - * **Add Another** - to add another query condition
 - * **Add** - to add the query in the query log
 - * **Update** - to update the existing query, in the query log
- See added or modified query conditions in query log. This is so you can see all the added query conditions in one place, and if required, delete or modify the existing query condition. Also, it will provide the option to put And/Or condition in the defined query conditions.

To view the Pickers functional sub-node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. Open the applicable BP.
In the left Navigator, you see the **Pickers** functional sub-node, in addition to the other sub-nodes, such as **Log Views**, **Mobile Log Views**, and **Customize Email**.

The **Pickers** functional sub-node is available if the picker DE has been added on the BP form. The **Pickers** functional sub-node log has the following panes:

- **Pickers Configuration** (the left pane), which displays the DEs under the **Data Elements** block. The **Data Elements** block displays the available pickers.
- **<picker name> Query Conditions** (the right pane), which displays the query conditions. In the **<picker name> Query Conditions** pane, you can use the following toolbar options:
 - Select **Add** to open the **Add Query Condition** window, select the DE, determine the condition for the query, create and add your query conditions.
The **Data Element** drop-down field is a required pulldown field that will list all the attributes. You can select any of these attributes to define the query.

The **Condition** field is a required field that is disabled by default. After the value for **Data Element** is selected, the system enables the **Condition** field and lists the values to select from.

For numeric type DEs, the conditions will differ from string and date type elements.

If the values for the **Data Element** and **Condition** are selected, a new section will be displayed labeled Value. The Value has the following options to select from:

- * **Dynamic**
- * **Constant**

Query condition value as Dynamic

By default, the option **Dynamic** is selected and there will be drop-down fields to select the data source and data element (based on **Data Source** value). The **Data Source** value can be <BP Name>, upper form, <BP Name> detail form, single instance BPs, and shell attributes. Based on the data source that you select, the list of matching DEs will be listed.

Query condition value as Constant

If you select **Constant**, a text box or pulldown is displayed, based on the type of the value under the **Data Element** field. In case of the text box, a placeholder text 'Type here' will be displayed. You can enter a constant value.

To select a value from predefined data set, a pulldown will be displayed, and you must select a constant value from the pulldown.

Example

If the **Data Element** value is **Status**, the constant displays a list of record statuses configured for the selected BP.

Query on Date type data element

When you select the **Date** DE for the type of the value under the **Data Element** field, the **Condition** drop-down field will list all the available conditions for the **Date** DE. Depending on the selection in the **Condition** drop-down field, different options will be displayed.

After all queries are added, they will be listed within the **Query Condition** log with the **And** condition as a checkbox, not selected by default.

- To apply an AND/OR condition to multiple query conditions, select the **Show results matching any of the following conditions** option. By default, this option is deselected. Based on the option you select, Boolean AND or OR logic is applied, and the record must meet *all* conditions to be displayed or *any* of the conditions. (A combination of AND/OR conditional logic is not supported.) If you select multiple values, the system determines whether a match to the same values is found in the query.

The **<picker name> Query Conditions** has the following columns:

- **Data Element**
- **Condition**
- **Value**
- **And/Or**
- **Delete**
- **Edit**

The **Cancel** and **Save** options will appear at the bottom, when you change an existing query or add a query. When you select **Save**, the query conditions will be saved in the database. After you select the **Save** or **Cancel** options, the system will not display those options on the pane, until the next change.

Note

- The attributes added on the detail form will be available to define query conditions even if it is a part of a hidden block.
- Any Record Status filtering applied to the BP that is using the Reference Process, query-based tab, when it is created in uDesigner, is superseded by BP picker filtering. If both levels of filtering are required, you must add the additional filter to the BP Configuration.

As soon as a query is added to the log, the **Delete** and **Edit** options will be displayed in log. The **Delete** option will delete the selected row, and the **Edit** option will open the **Modify Query Condition**, where you can view or modify the condition. Double-clicking an existing query in the query log also lets you view or modify the condition.

After performing any action, you must select **Save** to save the changes.

Date Type Query Condition

If the value for the **Condition** drop-down is empty, or not empty, there is no need to define any value.

You can select the value for **Condition** as **between** and select a date range between two dates: Date 1 and Date 2. The available options are:

- **Dynamic**
Selected by default. You are required to select a date for **Data Source** and a **Data Element** value to define value of the **Date** field.
- **Date**
To select the date from the system calendar.
- **Today**
To select the current date.

In the **Condition** field, if you select any value other than **between**, **is empty**, or **is not empty**, different options will be displayed for selecting the date value:

- **Date**
You can select one of these options:
 - **Dynamic**
Selected by default and the user needs to select a date 'Data Source' and 'Data Element' to define Date.
 - **Date**
To select the date from calendar.
 - **Today**
To select the current date.
- **Add/Subtracts days**
Your options are: **Plus**, **Minus**, and **None**. By default, **Plus** is selected.
- **Number of days**
Displayed only if **Plus** or **Minus** is selected. You can select one of the following options:
 - **Dynamic**
Selected by default. You must select a date **Data Source** and a **Data Element** to define the **Date**.
 - **Days**
To set a numeric value.

Customizing Email Subject Line

When you send task notification emails from various trigger points, you can customize the email subject line to provide more context to those notifications. You must have the permissions to configure a Business Process to access the node Customize Email grouping node.

The majority of the BPs include email subjects for Personal Tasks, CC'd Tasks, Overdue Personal Tasks, Record Workflow Complete, and Decline Tasks. The Request for Bid (RFB) types of BPs also include email subjects for Login Information, Bid Invitation, and Due Date Change.

Note

The email subject lines can be configured only for workflow-type business processes.

The **Subject Line** node contains a table of email types and preferred languages. You can configure the email subject line in multiple languages as set in the Company Preferences. The language that is set to "Active" in the **Internationalization** node is the only language displayed in the right pane.

To customize the email subject line:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Business Process**.
3. In the **Configuration - Business Processes** log, locate and open the applicable BP.
4. In the left Navigator, select **Customize Email**, and then select **Subject Line**.
5. Go to the column of the applicable language, and select **Configure** for the email type.

Note

The preferred language must be selected as "Active" in the **Internationalization** node.

6. In the **Subject Line in [language]** dialog box that appears, enter or edit the subject line in the free form text field.

Note

- The subject line can be a combination of simple text, shell information, data elements from the BP Upper Forms, and Workflow steps.
- The maximum number of characters must be fewer than 299.

7. Select the data elements from the grid in the lower section of the dialog box.

Note

The <DE Label> is displayed if the selected data element does not hold a value in the runtime.

8. Select **Save**.

The language column shows the email subject line corresponding to the email type.

Note

DEs of type Rich text are not available to be added in the email subject line configuration, or to be added to the custom email content.

Customizing Email Content

Just like the subject line, you can also customize the email content of task notifications.

The **Content** node contains a table of email types and preferred languages. You can configure email subject line in multiple languages as set in the Company Preferences. The language that is set to "Active" in the **Internationalization** node is the only language displayed in the right pane.

To customize the Email Content:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, select **Business Process**, and then open the applicable BP.
3. In the left Navigator, select **Customize Email**, and then select **Content**.
4. From the toolbar, select **Create**.
5. In the window that appears, select the tab for the preferred language.
6. Enter a **Name** for the email content template.
7. Type the content for the email in the box below. Select data elements to include in the email as needed.

Note

The <DE Label> is displayed if the selected data element does not hold a value in the runtime.

8. Select **Save**.

The language column in the Email Content log shows the total size of the email content.

Configuring Business Process Configuration Package

If tagged for Configuration Package, the system allows you to include the following configurations in the Business Processes:

- General setup
All the fields included in the General Configuration (General tab).
- Custom Print
Word and PDF templates, if any.
- BIP Custom Print
All the Oracle Analytics Server Custom Print in the Custom Prints and Reports.
- Workflows
All configured Workflows.
- Query
All queries that have been configured based on data elements.

For more information, see [Configuration Package Management](#).

General Procedures for Setting Up Business Processes

Business processes must be set up before use. The general procedures apply to company-level and project/shell-level business processes, with some differences.

Workflow Business Processes

Workflow business processes can have one or more BP setups, which define the workflow setup options. These include configuring the workflow and each step. These options control step behaviors as the BP moves through the steps of the workflow. Each step can have an associated duration and the workflow (consisting of all the steps) can have an overall duration, which facilitates project/shell data flow-through and tracking. BP setup is the process of choosing a configuration, assigning users or groups to each step, configuring the actions they can take on that step, and setting the durations.

You may want to create multiple workflows per BP to accommodate different ways for the workflow to operate. For example, you can configure an RFI workflow with or without a coordinator. You may or may not have a need for both workflows on your project/shell.

Non-workflow Business Processes

For non-workflow business processes, one setup is allowed. Setup includes adding the list of users who can create a non-workflow BP.

Set up of auto-creation of business processes or line items

Both workflow and non-workflow BPs support auto-creation. Auto-creation can be based on a:

- Condition that is met
- Date that passes
- Condition and a date
- Frequency (at periodic intervals, for example)
- Condition and frequency

You can auto-create BPs or line items from the upper form or the detail form, using creator elements. See [Set up auto-creation for a non-workflow BP or planning item](#) for non-workflow auto-creation setup and [Set Up Auto-creation for a Workflow BP](#) for workflow auto-creation.

Auto-creation of BPs based on workflow steps

You can specify that some workflow BPs include steps during the workflow that enable the auto-creation of BPs from an S-Step. See [Define the Business Process Workflow](#) for details.

Special setups

There are special setup procedures for blanket purchase order BPs and Request for Bid (RFB) BPs. There is an additional option for auto-creation of a commitment-level cash flow curve in setups for base commit business processes.

Loading a Business Process

Loading the business process is part of setting it up. In this step, you will be loading the configured business process into the area where it should reside—the Company Workspace or a project/shell. This step filters the business processes by company, shell, or project level,

thereby narrowing the number of BPs so that the users do not have to sift through your company's entire list of BPs.

When you load a business process, you also load the permission infrastructure and the ability to grant permissions for this BP.

To load a business process:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select one of the following:
 - To load a BP into the Company Workspace, select **Company Workspace**, and then select **Business Process Setup**.
 - To load a BP into a shell, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance]. In the left Navigator, select **Setup**, and then select **Business Process**.
 - To load a BP into the templates for a shell, select **Templates**, select **Shells**, select the [shell type], and open the [shell template]. In the left Navigator, select **Setup**, and then select **Business Process**.
3. Select **New**.
The New Business Processes window opens, showing the business processes that are available for loading.
4. Select the business process you want to load, and select **OK**.
The system displays the business process in the right pane.

Setting Up Non-Workflow Business Processes

Use this procedure to set up non-workflow business processes at the company-level or at the project/shell-level. The settings for each business process are specified in the **Business Process Setup** window.

Prerequisite: Ensure you have added the business processes to the log.

Procedure

To set up a non-workflow business process:

1. Go to the shell tab or go to the **Company Workspace** tab for a company-level business process.
2. Switch to **Admin** mode.
3. Navigate to the **Business Processes** log.
4. Select the non-workflow BP and select **Open**.
5. In the **General** tab of the **Setup** log, select **New**.
6. In the **Business Process Setup** window, enter information in the tabs below and select **OK**.
 - [General tab](#) to set up basic information about the non-workflow business process.
 - [Settings tab](#) to designate users who can create and edit the business process.
 - [View Forms tab](#) to control the information visible to users and groups.
 - [Record Properties tab](#) to control who can view BP properties and tabs, and download attachments in user mode.

- [Notification tab](#) to set up users and groups who will receive email notifications about the business process.
 - [Auto Creation tab](#) to specify whether line-items, records, or business processes are to be auto-created from this business process.
7. Select any of the following options:
- Select **Yes** to activate the business process (BP) and make it available to users.
 - Select **No** to keep the business process (BP) inactive until a later date.

Additionally, you can also set up [Single-Record Business Processes](#) to single-source information that you use repeatedly in your project/shell.

Basic Non-workflow Set Up in the General Tab

For a non-workflow business process, enter the following information in the **General** tab of the **Business Process Setup** window:

In this field:	Do this:
Setup Name	Enter a unique name (required field).
Description	Enter a description. This is optional, but recommended.
Help File	Lets you add a custom PDF help file.
Default Record Status	Use this field in setting up the creation of non-workflow business processes. The status you enter here will be used as the beginning status for a record created using any method—manual, integration, or auto-creation of any type.  Note If the default status that you select has been set to Inactive, an error message appears when you activate the business process setup, the selected status is removed from the list, and you must select a different status.
Send error notification to:	Specify the user to receive error notifications.

In this field:	Do this:
Save Record Information to Document Manager	Select this checkbox if the records produced by this business process should be automatically saved in the Document Manager. If you select this option, the system will send a copy of the business process' records, along with their comments and attachments, to a specified folder* in the Document Manager. The owner of the published record will be the assignee of the business process that published it. If the record exists in the folder, the record will be published as a revision. If the path to the folder is invalid for any reason, the record will be sent to the Unpublished Documents node. Depending on how you set up the business process, it can be automatically published to the Document Manager whenever an email notification is sent regarding the status of the business process. * This folder is identified on the business process with this data element uuu_dm_record_info_path. For information about this element, refer to the <i>Unifier Data Reference Guide</i>.
Default Record format for Notification and Document Manager	This option has two purposes: • If you want notification sent to users whenever a business process record is created or modified, use this option to specify the format in which you want the notification to be sent. • If you have selected the Save Record Information to Document Manager checkbox, use this option to specify the format in which the business process records should be saved.
Cash Flow: Default Template	This option only appears in CBS code-based Base Commit business processes. It lets you enable the auto-creation of a commitment-level cash flow curve at runtime for the business process record. The curve is based on the selected commitment-level cash flow template and is created when the record is complete. Select Add, and choose a template. For more information, see Setting Up Auto-Creation of Cash Flow Curves from Contracts.

Selecting Oracle Analytics Server Custom Print (Format / Custom)

The following is a list of conditions applicable to Oracle Analytics Server Custom Print.

Only published Oracle Analytics Server Custom print templates can be selected while setting up the Business Process; however, if you make any changes to the Published template and do not re-publish it to Oracle Analytics Server, the selected template will continue to remain in the Business Process (BP) setup option.

- If the BP setup has been done in a Project/Shell template, the setup will get pushed when you update the setup information onto instances of Projects/Shells.
- If you delete the Oracle Analytics Server Custom Print template selected in the BP Setup window, the system removes the deleted Oracle Analytics Server Custom Print template from the BP setup.
- If the system does not generate the print output, for example due to server issues, the email attachment, which contains the record information, generates an error message.

- Custom Print template included in the BP setup can be exported in the Configuration Package. By virtue of tagged BP design, the corresponding BP Setup from the tagged Shell template will also be included. If the Custom Print Template is not tagged, the Configuration Package export will result in an error.

Note

If the Oracle Analytics Server Custom Print output could not be generated because of connection issues to Oracle Analytics Server or inconsistencies in between Custom Print on Unifier and Oracle Analytics Server, the notification emails for Business Process modification will have an "error.html" document (as an attachment) instead of a record information document. In such a case, if the record information is published to the Document Manager, a 0 KB document will be published.

Set Up Creators and Editors of Non-Workflow Business Processes

For a non-workflow business process, enter the following information in the **Settings** tab of the **Business Process Setup** window to add users and groups who can create or edit business processes, or both:

In this field:	Do this:
Creator(s)	Click Select to choose the creators of the BP, that is, those users who may create a BP record from this setup. The system validates whether each selected user's company exists. If not, the system adds the Partner Company as a Member Company.

In this field:	Do this:
Editor(s)	Optionally, click Select to choose users or groups who can edit the business process without being granted explicit record-level permission. This allows users other than the assignee to edit the business process record. The Editors field can include users and groups that are also entered under Creator(s). The Editors can be added on these BP types: • Line Item • Cost (all types, including Lease and Line Item with Multiple Codes) • Document • Simple • RFB • Text Users or groups that you add as Editors can open and edit any record that they can see listed in the business process log, per their view access permission. Access permissions are View User Records, View Company Records, or View All Records. The user who is designated as an Editor must have at least one of these permissions to be able to view the record in the log to access it to edit.  Note • When you set up view permissions for non-workflow BPs, by design, the "View Company Records" option is not permitted. • To assign proper view permission for non-workflow BPs, you (Admin) must assign the view permission on each non-workflow BP, individually. • When you change settings, Save is enabled. After you select Save, a spinning wheel appears while your changes are saved and then Save is dimmed.

In this field:	Do this:
Allow Quick Calendar Entry	Click Select and choose the users or groups who will be allowed to use the quick entry feature to reserve the object of this business process, or to edit or delete it from the calendar. Note This option will appear only on those business processes that have been calendar-enabled by design.

Set Up View Forms for Non-Workflow Business Processes

As an Administrator, for non-workflow BPs, you can set up different view forms so that details that are relevant to users are seen.

Assigning view forms to non-workflow BPs enables administrators to control the visibility of certain data to various users or groups.

You can create view forms for all:

- Non-workflow BPs regardless of the type.
- Non-workflow BPs existing at both Project and Company Level.
- Non-workflow BPs of both Single Record and Multiple records.

Furthermore, the validations applicable to all:

- Non-workflow BPs that only have one Action form.
- Non-workflow BPs that have multiple view forms.

To add, remove, or edit view reports, open the non-workflow BP and follow the instructions in [Set Up View Forms for Workflow Business Processes](#).

If users have access to a deployed view form and that view form is deleted in uDesigner, at runtime, after a user opens the BP record, the system checks that user's permission to any of the BP view forms that exist in the setup. If the user does not have access to any of the BP view forms that exist in the setup, the system displays the Action form for that BP in view-only mode.

Important information about deleting View Forms

As indicated in the *Unifier uDesigner User Guide*, you can design a BP form (in the Staging environment), add view forms associated with a BP form design to the Business Process Setup (View Forms tab), assign permissions to users and groups for the individual view forms, and deploy the view forms so they can be accessed through the record preview in the log (Logs and Company Logs) for viewing record details.

Due to the system limitations, an anomaly occurs when you delete a view form from the Business Process Setup. The following explains this anomaly:

You have created and deployed the following view forms for a BP form ABC:

- VF01
- VF02
- VF03

You decide to delete one of the view forms. As a result, you navigate to uDesigner, delete the view form (for example, VF01), and ensure that the deleted view form has been removed from the Business Process Setup.

You decide to add a new view form (for example, VF04), for the BP form ABC, so you proceed to add the new view form in uDesigner and deploy the new view form, VF04.

At this point, due to the system limitations, the system will automatically add the newly created view form, VF04, to the Business Process Setup using the users and groups assignments originally assigned to the deleted view form, VF01. Furthermore, the availability of this added new view form (in the Business Process Setup) goes against the method that is used to deploy a new view form.

As an administrator, you must ensure that in such scenario, you open the newly created view form and assign appropriate permissions.

Additional information about View Forms for Non-Workflow Business Processes

If a view form that users have access to gets deleted, at runtime (when a user opens the Non-Workflow BP record), the system checks to see whether the user has permission to any of the view forms that exist in the BP Setup. If the user does not have access to any of the other view forms, the system displays the default form, the Action form, in view mode.

Set Up Record Properties for Non-Workflow Business Processes

In both non-workflow BPs and workflow BPs (at the company and project/shell levels) you (the administrator) can use the **Record Properties** tab to establish:

- The availability or visibility of the BP form properties tabs for users and groups.
- The ability to download attachments when users and groups access the BP records in user mode.

The **Record Properties** tab has the following sections:

Top: For setting up restrictions (setting restriction is done through **Edit Restrictions**)

Left: For Upper Form and Line Item (detail forms) properties and setting up restrictions for downloading attachments from the Upper Form and Line Items (detail forms). The left section displays all the record tabs seen in both upper and detail forms. For Simple BPs and Text-type BPs, only the Upper Form Properties tab will be seen. The Upper Form or Line Item properties options hidden in uDesigner will not be displayed.

Right: Users info (users or groups who cannot see the properties)

The **Record Properties** window displays a read-only view of all the users and groups who are restricted to the visibility of selected tabs, or to download of attachments for selected tabs, in **Edit Restrictions** window. You can use **Edit Restrictions** to apply restrictions to users and groups.

Restricting the **Audit Log** and **Workflow Progress** options below will result in the automatic update of the same options in **Permissions Settings** of **Access Control**. The same operation applies in reverse.

The **Attachments** in **Upper Form Properties** section will not be shown for the system-defined **Line Item** tab in the Document type BP.

The additional section **Do not allow download of Attachments** will show the users and groups who are restricted to download the attachments from **Upper Form** or **Line Item** tabs in the business process record, when the attachments are visible.

The first tab seen in the **Do not allow download of Attachments** are the **Upper Form Attachments** followed by the **Line Item** tabs names (for example, Gauges & Meters or Components) which will be in the same order as seen in the **Line Item Properties**.

The **Upper Form Attachments** tab will not be shown for the Text type and Document type BPs. Additionally, the system-defined tab will not be shown for the Document type BP, under the **Do not allow download of Attachments** section.

The tabs seen in the **Upper Form** and **Detail Form** properties will be based on each BP type.

The tabs shown in **Upper Form** and **Line item Properties** will be in the same order seen in the BP record at run time.

The **Upper Form Properties** and **Line Item Form Properties** which are already hidden in uDesigner will not be shown in this list.

Example: If the **Linked Records** tab and **Linked Mail** tab from the **Upper Form Properties** are set to be hidden in **Record Properties** in uDesigner, those two tabs will not be seen in the **BP Setup** under the **Upper Form Properties**. Similarly, if the user-set **Attachments** tab in the **Upper Form Properties** is hidden in **Record Properties** in uDesigner, then in the **Record Properties** in **BP Setup** the user will not be able to see the following tabs:

- Do not allow download of Attachments
Upper Form Attachments
- Upper Form Properties
Attachments

Adding tab visibility and download of attachments restrictions to users and groups

You can add restrictions to the users and groups through the **Edit Restrictions** option. The restricted users and groups will be seen on the right block for the property selected on the left side.

Edit Restrictions window:

When you select **Edit Restrictions**, you can select or add user and groups, and assign attribute form restrictions. The **Select Users/Groups** block (the left pane of the window) will be empty if there are no existing restrictions; otherwise, the block will list the existing restricted users and groups. Use the **Remove** option to remove the users and groups listed in this block. You can select one or more users or groups and select the **Remove** option to remove users or groups from the tab visibility restrictions.

In the right section of the window, you can access and hide all the following form properties:

Hide All Upper Form Properties

- Attachments
- Do not allow download of Attachments
- Comments
- Linked Records
- Linked Mail

- Workflow Progress
- Audit Log
- Reference Records
- Integration Log

Hide All Line Item Properties

- <Line item tab1 name> Attachments
- Do not allow download of Attachments
- <Line item tab2 name> Linked Records
- <Line item tab2 name> Attachments
- Do not allow download of Attachments
- <Line item tab2 name> Linked Records

The **Detail Form Attributes** will be shown based on the **Line Item** tabs available in the selected business process. Additionally, users and groups can be restricted to download the attachments only from the business process record.

If a single user or group is selected on the left side, the selected user or group's existing restrictions will be shown.

The **Cancel** and **Save** options will remain disabled if you do not make any changes in the right block. If you select a user or group and change the restriction options, the **Cancel** and **Save** options will be enabled. The **Cancel** and **Save** options let you save or cancel the changes that you have made in the right block.

After you close the **Edit Restrictions** window, the restricted users and groups will be added in the **Record Properties** window.

You can select multiple rows in **Users/Groups** section, edit the restriction checkboxes, and save or cancel your changes.

If multiple users or groups (on the left block) are selected, the existing restrictions will not be shown in the right block.

For **Attachments**, a user who has Download restrictions can view or access the attachment but cannot download or save the attachment.

Users/Groups window

When you select **Add**, the **User/Group** window opens. This picker window displays all the users and groups that are available and selected. After the users and groups are added, you can select the users or groups (from the left block) and set the hide permissions for the form attributes (in the right block).

Note

Users or groups cannot be removed from the **User/Group Picker** window. You can use this picker window to add users and groups to the **Edit Restrictions** window. You can remove any added users or groups by selecting one or more rows in the **Selected Users/Groups** block.

After you add restrictions in the **Edit Restrictions** window, the left block displays the list of all users and groups with restrictions to the form attributes. When you select a form attribute such

as **Audit Log** or **Comments**, the right block displays the list of all the restricted users and groups. A user who has restricted access to selected record attributes like **Audit Log**, **Comments**, or **Linked Mail** viewing in the business process record will not see those tabs.

Example: User U1 has the restriction, **Hide Upper Form Properties - Comments and Linked Records**. At runtime, when user U1 creates a business process (BP) record or opens an existing record, the **Comments** tab and the **Linked Records** tab will not be available in the record.

Attachments

If a user is only restricted from downloading attachments, the user can however view the attachments in **User** mode. The **Download** option is removed from the **Attachments** tab and also in the **Review** window.

In this case, a restricted user who views the attachment using the Native viewer will see the attachment open in the viewer and in read-only mode.

A user who is restricted from downloading attachments of business process (BP) records will not be able to receive attachments through email notifications received for any business process (BP) records.

Line Item Attributes

You can assign restrictions to users and groups for the Detail Form properties (**Attachments** and **Linked Records** for each **Line Item** tab). These additional Detail Form attributes will be seen only for the business processes that have the Detail Form defined in them.

The Detail Form properties seen in the Record Properties window will vary for each business process and is based on the design.

Users and groups can be restricted to download attachments from the **Line Item** tab, similar to the Upper Form, as described in the **Attachments** section above.

Additional information

Users and Groups who have permissions to **Hide Record Audit Log** and **Hide Task Statuses** are added to the restricted users and groups viewers list in the **Record Properties** tab, in the business process setup.

All the record level and Line Item tab restrictions are available for all business processes (company and project/shell levels) that support standard UI.

The restrictions are applicable to all users or creators, task assignees, step editors, record editors, and CC'd users who are part of the workflow in the record.

Visibility of tabs will be applicable to both Action and View Forms when the user has tab restrictions to the BP.

For non-workflow BPs, the **Workflow Progress** (under the Upper Form Properties) will not be available in the **Record Properties** tab, both at the design and at the setup level.

For Company-level BPs, **Linked Mail** will not be available in the Form Properties.

For Simple and Text-type BPs, the option to hide the Detail Form properties will not be available.

For Document-type BPs, **Attachments** will not be seen in the Upper Form Properties and the system defined tab in Line Item Properties.

Note

The additional restrictions do not apply to bid users. Bidders will be able to see all the attributes even though the requestor has restricted access.

When certain form properties are hidden for a business process, those form properties are not shown in the **Record Properties** tab of the BP Setup.

If users or groups do not have the **View** permission, the BP record tabs will not be displayed at runtime. This applies to both company-sponsored and partner users.

Projects/shells do not show Rich Text type DEs in the following scenarios:

- When creating conditions for auto-creation elements in a BP setup.
- When editing Gate settings and setting up Gate Condition Elements.

Assigning restrictions to users and groups will impact their ability to see the **Record Properties** tab (tabs in the right pane, when the user opens a record) of the following nodes:

- Logs
- Drafts
- Tasks
- Master Log
- Company Log
- Single-Record BP Log
- Portal BP Log

Set Up Permissions for Record Properties Tab (Non-Workflow)

To set up permissions for the **Record Properties** tab:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the **[shell type]**, and open the **[shell name]**.
3. In the left Navigator, select **Setup**, select **Business Process**, and select the **[BP name]**.
4. Open the BP (Workflow or Non-Workflow).
5. Select the **Records Properties** tab.

Set up email notification for a non-workflow BP

Use the **Notification** tab in the **Business Process Setup** window to set up automatic email notifications to users and groups whenever a non-workflow business process is created or modified, either manually, or via auto-creation, reverse auto-population, CSV, or integration.

Note

If the business process has been designed to allow users to include additional users or groups in the email, the email notification will be sent to them as well.

1. Use the information in the table below to complete the **Notification** tab.
2. Select **Apply** to save your changes and **OK** to exit.

In this field:	Do this:
Send notifications to	Click Select and choose those users or groups that should be notified whenever a non-workflow business process is created or modified.
Notify creator on record modification	By default, this checkbox is selected. If you do not want the BP creator to be notified when the business process is modified, deselect this checkbox.
Notification triggering events	The fields you select here will tell the system when to notify the users or groups.
Create Record	Select this checkbox if notification should go out whenever a record is created.
Edit Upper Form	Select this checkbox if notification should go out whenever the upper form of a record is edited.
Add/Edit/Delete Line Items	Select this checkbox if notification should go out whenever a line item is added to the record, edited, or deleted from the record.
Add General Comment	Select this checkbox if notification should go out whenever comments are added to a record.
Add/Remove Attachments	Select this checkbox if notification should go out whenever attachments are added to or removed from a record.
Attachments	The fields you select here will tell the system how to add attachments to the record.
Include both record and line item attachments	Select this checkbox if the notification should include both the record and the line item attachments.
Include record information as attachment	Select this checkbox if the notification should include the record information as an attachment.
Override default format	If you have specified a default record format on the General tab, you can use this checkbox to override the default format. For example, you can use the General tab to specify that the default record format for both email notifications and records saved in the Document Manager be in PDF format. If necessary, you could then use the Override default format checkbox to override the format and choose Custom for the notification only.
Format PDF/Custom	Select the form. The attachments are PDF or a custom format. Oracle Analytics Server Custom Prints are available to be selected for the Notification format. For custom format, select the print format defined for the business process.

 Note

The system sends emails for reverse auto-population failures. There may be cases when email notifications are not sent. For such cases, you can find the reasons for the reverse auto-population (RAP) failures in the audit log of the business process record. In addition, on occasion the system generates error codes for reverse auto population failures which can be used to troubleshoot the reverse auto population failures.

Set up auto-creation for a non-workflow BP or planning item

On the Auto-Creation tab, you can set up the auto-creation of another record or line item for the business process you are setting up. You can also set up the auto-creation for other business processes that will be spawned by this business process.

For information about auto-creating business processes, see [Auto-creating BP Record or Planning Item Based on Conditions or Frequency](#).

The data elements of type rich text are not available to create conditions for auto-creation elements in a BP Setup.

To access the setup for the Company Workspace:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, select **Business Process Setup**, and then open the applicable BP.

To access the setup for a project/shell:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, select **Business Process**, and then open the applicable BP.

When a line item is auto-created (by using the line item auto-creation logic), the values in the fields on the line item that are based on a data picker in that line item will not be auto-populated.

To set up auto-creation of a non-workflow business process or planning item:

1. Select the **Auto Creation** tab.
2. Under **Settings for auto creation of** [*name of the business process, planning item, or line item you are setting up*], in the **Creator** field, click **Select**, and choose the name of the auto-creator.
3. Under the section **Settings for auto-creation of other business process records or line items**, select the BP creator element under the upper or detail form. The **Auto creation of** line identifies the business process or the line item that the creator element you selected will create.
4. (Not an option for line item creation.) In the **Assignee/Creator** field, click **Select**, and choose the name of the user or group who should assume ownership of the auto-created record.
The system validates whether the selected user's company exists. If not, the system adds the Partner Company as a Member Company.
5. Ignore the **Duration** field.
6. To create the conditions that will trigger the auto-creation, select the **Enable condition based auto creation** checkbox and continue as follows:

Note

If you leave this checkbox deselected, the BP, planning item, or line item will be available for manual creation only.

- a. To add a trigger condition, select **Add**. The **Add Condition** window opens.
- b. On the **General** tab, enter a name for the trigger and a description.
- c. Select the **Query** tab.
The **Query** tab is where you will define the conditions the data must meet before the system will auto-create the new business process record or line item.

In the upper section of the window, you can specify that a field on the business process form:

- Must meet a certain criteria or value
- Must meet a certain value based on a formula using the numeric fields on the form

Select **Add** to specify a condition for a field on the business process form. Select **Add Formula** to create a formula that the value of the field must meet. Use the information in Queries to complete the query.

Select the **match ANY condition (instead of ALL)** checkbox if the query can match any single condition to extract the information. If the query must match ALL conditions, leave this checkbox deselected.

In the lower section of the window, you can specify a date condition that will trigger the auto-creation. Use the information in Queries.

Date condition triggers are not available for line item auto-creation.

About Date Triggers:

- If you want to create a continual date trigger condition, make sure you use the Date Trigger Condition section of the window to create it. Although you can also create a date trigger using a formula in the upper section of the window, the system will process the triggers differently.
 - The conditions you specify in the upper section of the window will be processed only once, when the user selects Finish Editing on the form. However, the date conditions you specify in the DateTrigger Condition section will be processed daily.
 - This behavior is important to consider when you are creating a date condition that occurs in the future. A date trigger specified under the Date Trigger Condition section will be processed daily, and will, therefore, "catch" the trigger condition when the future date occurs.
- d. Select **OK**.
7. If you want the auto-created record or line item to include attachments from the original (source) record, select the **Include Attachments** checkbox.

Note

This step is not applicable for Document type business processes.

If you select this option:

- Any record-level attachments made to the source record will appear at the record level of the destination record.
 - Any attachments made to the line items of the source record will appear at the line item level of the destination record.
8. (Not an option for line item creation.) If you want to bypass the 1 step that this auto-creation normally creates, select the **Bypass initiation step during auto creation** checkbox.

If you select this option, the auto-created BP or planning item will skip the initiation step and will appear in the user's Tasks Log and BP Log or Planning Item Log with the status that was specified on the General tab of the business process setup window. For more information, see [Auto-creating BP Record or Planning Item Based on Conditions or Frequency](#).

9. If you want to copy any records that are linked to the original record, select the **Copy Linked Records** checkbox.
10. (Not an option for line item creation.) If you are creating a record from a detail form, you can group line items into a single record. To do so, select the **Enable grouping of line items when autocreating records from line item tabs** checkbox.
In the Group By field, click **Select**, and select the data element (or elements) you want to group by. If the values in these data elements match for any of the line items, the system will auto-create a single record for them. For more information, see [Grouping line items into single records](#).

Note

If you leave the Group By field blank, the system will auto-create a single record containing all the line items on the source record.

11. Select **Apply** to save your changes, or **OK** to save and exit the window.

You can find the reasons for the auto-creation failures in the audit log of the business process record. In addition, on occasion the system generates error codes for auto-creation failures which can be used to troubleshoot the auto-creation failures.

Set up record and line item copy options

Use this feature to set up copy options for users when they copy a record with line items and references.

The options you specify here will give the user the ability to copy specific (rather than all) line items, as well as the ability to include attachments and linked records, and retain or remove references to auto-created records.

To set up these options, you must create a condition the data element must meet for the line item to be included for these copy options.

For example, you could create a set of options specifying that all line items with a status of "open" be copied and their attachments be included in the copy. Using this example, you could set up a weekly meeting minutes business process that automatically generates action item business processes for each task that arises from the meeting. Using these copy options, you could roll over action items that are still open to the next week's meeting minutes.

At runtime, the options you set up here will be given to users to choose from when they copy records.

Note

- During Record Copy operations, if the value in a BP picker does not meet the filtering conditions that have been configured for the created BP, the system displays an error message and does not copy the record. Additionally, in the Step Form of the created BP, any data elements that are configured to auto-populate from the picker are cleared.
- During Line Item Copy operations, if you are adding line items using Grid View and the value does not meet the filtering conditions, the system displays an error message but the line items are saved with the invalid values.

The following shows a list of BPs where the Record Copy option is *supported*:

Type	Sub-type	Classification
Cost	Line item with WBS Code	Generic
		Transfer
		Base Commit
		Change Commit
		General Spends
	Line Item with Multiple Codes	Generic
		Transfer
		Base Commit
		Change Commit
		General Spends
Line Item		Generic
		Transfer
		Line Items to filter company Business Process records

To set up copy options:

1. Open the business process for which you want to set up the copy options.
2. Select the **Record Copy** tab. The Record Copy Setup window opens.
3. Select the **Add** button. The Copy Condition Setup window opens.
4. In the **Name** field, enter a name for this copy setup. The name should be unique, and can be up to 250 characters long.
This is the name that will appear on the list of copy options the user will see when they copy a record or line item.
5. (Optional) In the **Description** field, enter a description of what this setup does.

Note

For clarity, include a precise description of what the copy options are for the setup. This description will appear on the list of copy options the user will see when they copy the record, and a good description will tell them exactly what will be copied. You can enter up to 4000 characters.

6. Under the **Condition** area of the window, select the Add button. The Query Condition window opens.
7. In the **Data Element** field, select the of the field on the line item form that you want to use to identify which lines items can be copied.
8. In the **Condition** field, select the operator that the system should use to test the data element you selected.
A condition is a state or restriction the value in the data element (field) must meet. A condition of the value might be that it must be equal to a certain number (maybe 10) or that it must contain a certain string of letters (such as "due date of").

If the data element meets the condition you specify, the system will include this line item on the list the user can choose from. Use the information in the Queries section to complete the query.
9. Select **OK**.
10. On the **Copy Condition Setup** window, specify these additional copy options as shown in the table below.
11. Select **OK**.

Select this checkbox:	To:
Include Attachments	Include attachments in the copy operation.
Copy Linked Records	Include any linked records in the copy operation.
Retain reference to auto-created business process records on record upper form	Keep the references to business processes that were auto-created from the upper form.
Retain reference to auto-created business process records on line items across all tabs	Keep the references to business processes that were auto-created from the line item (detail) form. This applies to all line items from all tabs.

Single-Record Business Processes

Single-record business processes (BPs) store information that you use repeatedly in your projects. Think of them as file cabinets where you keep things like industry standards; federal, state, and local regulations and statutes; policies; and FAQs. You can have multiple single-record BPs in a project, each with its own information focus. From these single records you can auto-populate fields in BPs, including constant values.

To facilitate single-sourcing of your data, create the single-record BP in the project/shell template prior to creating your project from the template. When you clone a project/shell template, you have the option to select BP Setup, which not only copies all BP setups, but all single-record BP records and their data.

Data copied from single-record BPs includes:

- Attachments to records and line items, if applicable

- All data pickers (Business Process, Configurable Managers, Shell Manager, User Attributes)
- Any other pickers including BP pickers
- Linked elements
- Permissions associated with the single-record BP

Copying a single-record BP does not include:

- Linked records
- Linked mail
- General comments

You can also use CSV or web services to clone a project/shell template that contains the single-record BP.

These BPs are excluded from the **Logs** list in the left Navigator for the applicable project/shell; however, they are included in the **General** section listed under **Information** in the left Navigator. You can also update the **User Mode Navigator** to list them under the **Home** tab. For more information, see [Configuring the User Mode Navigator](#).

To create a single-record BP:

1. Before you begin:
 - Ensure that you have Setup permission for the BP. For more information, see [Edit User or Group Permissions Using Access Control](#).
 - Follow the directions to set up a non-workflow BP. For more information, see [Basic Non-workflow Set Up in the General Tab](#) and [Set Up Creators and Editors of Non-Workflow Business Processes](#).
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]** in which the single-record BP resides.
4. In the left Navigator, select **Information**, and then select **General**.
5. On the right pane, open the single-record BP record and complete all required fields.
6. Select **Save** or **Submit**, as appropriate. Both actions save the record, but Save leaves the record in Edit mode, and Submit leaves the record in a read-only state.

Note

- When you create a non-workflow BP record, you can only select a Status that is Active.
- If you select Submit and the record is in a terminal status, you will not be able to edit that record again.

7. Assign record permissions as appropriate.
When you change settings in the Permissions window, **Save** is enabled. After you select Save, a spinning wheel appears while your changes are saved and then Save is dimmed.

Setting Up Workflow Business Processes

Use this procedure to set up a workflow business processes at the company-level or at the project/shell-level.

Prerequisite: Ensure you have added the business process to the log.

Procedure

To set up workflow business process:

1. Go to the shell tab, or go to the **Company Workspace** tab for a company-level business process.
2. Switch to **Admin** mode.
3. In the left Navigator:
 - For project/shell, select **Setup**, and then select **Business Process**.
 - For company-level business process, select **Business Process Setup**.
4. In the **Business Processes** log in the right pane, select a BP, and select **Open**.
5. In the **BP Name Setup** log in the right pane, select the business process (BP), and select **Open**.
6. In the **Business Process Setup** window of the selected BP, enter information in the following tabs, and select **OK**:
 - [General tab](#)
 - [Settings tab](#)
 - [Set Up View Forms for Workflow Business Processes](#)
 - [Record Properties tab](#)
 - [Notification tab](#)
 - [Auto Creation tab](#)
7. Proceed to complete [Workflow Setup in Company-Level BPs or Project-Level BPs](#).

Note

To configure a setup for multiple workflows, repeat this procedure for each workflow available for the business process.

8. Select any of the following options:
 - Select **Yes** to activate the BP and make it available to users.
 - Select **No** to keep the BP inactive until a later date.

Important information

After a workflow record is created by using any workflow schema (unique combination of Setup Name + Workflow Name), the workflow record continues to reference the workflow schema even if the Status of the workflow schema has been set to Inactive.

This condition includes workflow records that are in the following statuses:

- Draft
- Initiation Step (I-Step)
- Also, this condition includes any workflow record at any other step in the workflow.

If there is an Active BP Template, the Template continues to create records referencing the Inactive workflow schema. For instructions on creating a template, see [Creating BP Templates and Scheduling BP Creation](#).

Business Process Node

The business process **<BP Name>** node lets you set up specific information about that BP.

When you select the business process **<BP Name>** node (listed under the **Business Process** functional node), the **<BP Name> Setup** log opens. When you open the BP listed in the log, the **Business Process Setup** window opens showing the following tabs, which let you set specific information about that BP:

General Tab

To see the BP name and description. You can use this tab to:

- Add or remove a help file for that BP
- Select who to send the error notifications to

Settings Tab

To select the record editors from the **User/Group Picker**.

View Forms Tab

You can add **View Forms** to the BP setup (**Add**, and then click **Select View Forms**) and assign permissions (**Permission Settings**) to the users and groups (**Viewers**, and then select **User/Group Picker**) for each individual view form. This lets you set up and use a different view from the one that is assigned to the workflow step.

The users and groups will use the **View Forms** to preview a record and its details in the BP log.

A user or group having permissions to multiple **View Forms**:

- Will see the **View Forms** based on the sequence that is seen in the **Forms** list
- Can apply the **View Forms** settings for when the **Task Assignees** and **CC'd** users view records

If you select the **Also apply View Form Settings when Task Assignees and CC'd users view records** option in this tab, the system will override the view form of the workflow step design with the view form that the user has access to, through this setup.

Record Properties Tab

To set up restrictions for **Form Tabs** and **Attachments**.

You can restrict the ability of a user or group to view certain record tabs or download record attachments. Groups restrictions will override Users restrictions.

Restricting the **Workflow Progress** and **Audit Log** options (under the **Upper Form Properties**) will result in the automatic update of the same options in the **Permissions Settings** (or **Access Control**). The same operation applies in reverse.

Select **Edit Restrictions** to open the **Edit Restrictions** window for the BP. Use this window to select users or groups and determine restrictions for the following elements within the BP. You can also use this window to remove the users or groups and their restrictions.

- Hide All Upper Form Properties
- Attachments
- Do not allow download of Attachments
- Comments
- Linked Records
- Linked Mail
- Workflow Progress
- Audit Log
- Reference Records
- Integration Log

Notification Tab

To set up the details for the following elements:

- **Send Notifications to:**
 - Notify Creator on Record Modification
 - Notify Assignee on Record Modification
 - Notify Cc on Record Modification
- **Notification Triggering Events:**
Record Modification
 - Edit Upper Form
 - Add General Comments
 - Add/Remove Attachments
- **Attachments:**
 - Include both record and line item attachments
 - Include record information as attachment
- **Custom Notifications:**
 - Personal Tasks
 - Decline Tasks
 - Overdue Personal Tasks
 - Messages
 - Record Workflow Complete
 - Record Modification
 - Contact Lists

Auto Creation Tab

Use this tab to:

- Set up the auto creation specifications for the BP. You can determine the action (**Setup**), select users or groups (**Creator**), and set up the specific action that the system must take (**Action**).

- Set up auto creation of other Business Process records or line items.

The preceding and following topics provide more information about the tabs and the fields within each tab.

Basic workflow setup in General tab

For a workflow business process, enter the following information in the **General** tab of the **Business Process Setup** window:

In this field:	Do this:
Setup Name	Enter a unique name (required field).
Description	Enter an optional description of the setup.
Help File	Lets you add a custom PDF help file.
Auto Creation Workflow	The workflow to use for the auto-created BP. Workflow Setup in Company-Level BPs or Project-Level BPs.
Auto Creator	Select the name to use as the creator of any auto-created records of this BP.
Auto Action	Select the step to use as the first step in the workflow of auto-created records.
Send error notification to	Specify the user to receive error notifications.
Default Record format for Notification and Document Manager	This option has two purposes: • If you want notification sent to users whenever a business process record is created or modified, use this option to specify the format in which you want the notification to be sent. • If you have checked the Save Record Information to Document Manager checkbox, use this option to specify the format in which the business process records should be saved.

Selecting Oracle Analytics Server Custom Print (Format / Custom)

The following is a list of conditions applicable to Oracle Analytics Server Custom Print.

Only published Oracle Analytics Server Custom print templates can be selected while setting up the Business Process; however, if you make any changes to the Published template and do not re-publish it to Oracle Analytics Server, the selected template will continue to remain in the Business Process (BP) setup option.

- If the BP setup has been done in a Project/Shell template, the setup will get pushed when you update the setup information onto instances of Projects/Shells.
- If you delete the Oracle Analytics Server Custom Print template selected in the BP Setup window, the system removes the deleted Oracle Analytics Server Custom Print template from the BP setup.
- If the system does not generate the print output, for example due to server issues, the email attachment, which contains the record information, generates an error message.
- Custom Print template included in the BP setup can be exported in the Configuration Package. By virtue of tagged BP design, the corresponding BP Setup from the tagged Shell template will also be included. If the Custom Print Template is not tagged, the Configuration Package export will result in an error.

Note

If the Oracle Analytics Server Custom Print output could not be generated because of connection issues to Oracle Analytics Server or inconsistencies in between Custom Print on Unifier and Oracle Analytics Server, the notification emails for Business Process modification will have an "error.html" document (as an attachment) instead of a record information document. In such a case, if the record information is published to the Document Manager, a 0 KB document will be published.

Designate additional editors for Business Process records

Normally, the editors of any record must be an assignee on the step of the workflow. However, there are times when a record may need editing by someone other than the step assignees. For example, the owner of a purchase order record should be able to attach revised documents to the PO at the end step of the workflow. Or an engineer who has sent a task to an architect realizes that some drawings are missing from the record. The engineer should be able to attach the documents to the record, even though the task assignee is now the architect.

The **Settings** tab is where you can designate non-assignee editors for business process records. (These editors must have permission to at least view the record.) Editors designated on this tab can open records and modify the upper or line item content of the record. Changes made by these editors are recorded in the audit log. Whereas step assignees will see the form that is attached to a step, the record editors you designate on this tab will see a specific form for editing. This form must be specified when the business process is created.

Note

The editors you specify on this tab are record-level editors. You can designate additional editors at the step level when you set up the workflow. For more information, see [Define the Business Process Workflow](#).

To designate additional editors for records:

1. Select the **Settings** tab.
2. In the **Record Editor(s)** field, click **Select**, and choose the users or groups who should have editing privileges on this record.
3. Select **Apply** to save these settings.

Set Up View Forms for Workflow Business Processes

A view form is the read-only version of a business process form that appears when the recipient first opens the form. The system uses the view form to show a preview of the record in the log. The view form enables the user to view record details. The fields in a view form cannot be edited. A view form may also be used when the designer does not want the user to be able to change the data on the form.

Note

Business process forms can only be printed from a view form.

As an Administrator, you can set up different view forms such that details that are relevant to users are seen. You can set user-permissions so users can view the entire form, a portion of the form, or a limited set of data on the form, for record preview in the log as well as for viewing record details.

When you set up a workflow business process (all levels and record instances), you can use the **View Forms** tab of the **Business Process Setup** window to set up different view forms such that details that are relevant to users are seen.

To access the **View Forms** tab:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Business Process**.
3. Open the business process that you want to set up different view forms for.
4. Select an item under the **Setup Name** column and open it.
5. Select the **View Forms** tab to open it.

Use the steps above to remove, move up, or move down existing view forms.

From the **View Forms** tab:

- You can add view forms to a BP setup.
- Assign settings to users and groups for individual view forms.
- Apply your settings to task assignees and copied (cc'd) users who view the record.
 - If task assignees and copied (cc'd) users have restricted access to only one of the view forms listed in the window, that view form will be displayed at runtime.
 - If task assignees and copied (cc'd) users have access to none of the view forms listed in the window, the step form will be displayed at runtime.
 - For copied (cc'd) users the restricted view form will be seen both from Notifications and Logs.

Note

If the users or groups have permission to view multiple view forms, they will see the view forms based on the sequence listed in this window.

To add a view form:

1. In the **View Forms** tab, select **Add** to open the **Select View Forms** window.
2. Under the **View Forms** column, a list of view forms from the BP design is displayed. Select as many forms as you need, and select **OK** to add the view forms.
3. After the form has been added, the right section will display the **Permission Settings** block. The **Permission Settings** block contains the **Viewers** field. Use the **Select** option to see the users or groups picker (**Users/Groups**) and add. The list of users and groups seen here will be the same as the ones seen when assignees are being set up in the workflow setup.

An administrator can select the view forms that need to be set up for a given project/shell. The design for a BP can have multiple view forms, but for a select project template, or shell template, the administrator can set up only one view form.

If users have access to a deployed view form and that view form is deleted in uDesigner, at runtime, after a user opens the BP record, the system checks that user's permission to any of the BP view forms that exist in the setup. If the user does not have access to any of the BP view forms that exist in the setup, the system displays the Action form for that BP in view-only mode.

Important information about deleting View Forms

As indicated in the *Unifier uDesigner User Guide*, you can design a BP form (in the Staging environment), add view forms associated with a BP form design to the Business Process Setup (View Forms tab), assign permissions to users and groups for the individual view forms, and deploy the view forms so they can be accessed through the record preview in the log (Logs and Company Logs) for viewing record details.

Due to the system limitations, an anomaly occurs when you delete a view form from the Business Process Setup. The following explains this anomaly:

You have created and deployed the following view forms for a BP form ABC:

- VF01
- VF02
- VF03

You decide to delete one of the view forms. As a result, you navigate to uDesigner, delete the view form (for example, VF01), and ensure that the deleted view form has been removed from the Business Process Setup.

You decide to add a new view form (for example, VF04), for the BP form ABC, so you proceed to add the new view form in uDesigner and deploy the new view form, VF04.

At this point, due to the system limitations, the system will automatically add the newly created view form, VF04, to the Business Process Setup using the users and groups assignments originally assigned to the deleted view form, VF01. Furthermore, the availability of this added new view form (in the Business Process Setup) goes against the method that is used to deploy a new view form.

As an administrator, you must ensure that in such scenario, you open the newly created view form and assign appropriate permissions.

Set Up Record Properties for Workflow Business Processes

In both Non-Workflow BPs and Workflow BPs (at the company and project/shell levels) you (the administrator) can use the **Record Properties** tab to establish:

- The availability or visibility of the BP form properties tabs for users and groups.
- The ability to download attachments when users and groups access the BP records in user mode.

The **Record Properties** tab has the following sections:

Top: For setting up restrictions (setting restriction is done through **Edit Restrictions**)

Left: For Upper Form and Line Item (detail forms) properties and setting up restrictions for downloading attachments from the Upper Form and Line Items (detail forms). The left section

displays all the record tabs seen in both upper and detail forms. For Simple-type and Text-type BPs, only the Upper form properties tab will be seen. The Upper Form or Line Item properties options that were hidden in uDesigner will not be displayed.

Right: Users info (users or groups who cannot see the properties)

The **Record Properties** window displays a read-only view of users and groups who are restricted from viewing or downloading attachments for selected tabs in the **Edit Restrictions** window. You can use **Edit Restrictions** to apply restrictions to users and groups.

Restricting the **Audit Log** and **Workflow Progress** options below will result in the automatic update of the same options in **Permissions Settings** of **Access Control**. The same operation applies in reverse.

The **Attachments** in **Upper Form Properties** section will not be shown for the system-defined **Line Item** tab in the Document type BP.

The additional section **Do not allow download of Attachments** will show the users and groups who are restricted from downloading the attachments from **Upper Form** or **Line Item** tabs in the business process record, when the attachments are visible.

The first tab seen in the **Do not allow download of Attachments** is the **Upper Form Attachments** followed by the Line Item tabs names (for example, Gauges & Meters or Components) which will be in the same order as seen in the **Line Item Properties**.

The **Upper Form Attachments** tab will not be shown for the Text type and Document type BPs. Additionally, the system-defined tab will not be shown for the Document type BP, under the **Do not allow download of Attachments** section.

The tabs seen in the **Upper Form** and **Detail Form** properties will be based on each BP type.

The tabs shown in **Upper Form** and **Line item Properties** will be in the same order as seen in the BP record at runtime.

The **Upper Form Properties** and **Line Item Form Properties** that are already hidden are not shown in this list.

Example: If the **Linked Records** tab and **Linked Mail** tab from the **Upper Form Properties** are set to be hidden in **Record Properties** in uDesigner, those two tabs will not be seen in the BP Setup under **Upper Form Properties**. Similarly, if the user-set **Attachments** tab in the **Upper Form Properties** is hidden in **Record Properties** in uDesigner, then in the **Record Properties** in BP Setup the user will not be able to see the following tabs:

- Do not allow download of Attachments
Upper Form Attachments
- Upper Form Properties
Attachments

Adding tab visibility and download of attachments restrictions to users and groups

You can add restrictions to the users and groups through the **Edit Restrictions** option. The restricted users and groups will be seen on the right block for the property selected on the left side.

Edit Restrictions window:

When you select the **Edit Restrictions** option, you can select or add user and groups, and assign attribute form restrictions. The **Select Users/Groups** block (the left pane of the window) will be empty if there are no existing restrictions; otherwise, the block will list the existing restricted users and groups. Use the **Remove** option to remove the users and groups listed in

this block. You can select one or more users or groups and select the **Remove** option to remove users or groups from the tab visibility restrictions.

In the right section of the window, you can access and hide all the following form properties:

Hide All Upper Form Properties

- Attachments
- Do not allow download of Attachments
- Comments
- Linked Records
- Linked Mail
- Workflow Progress
- Audit Log
- Reference Records
- Integration Log

Hide All Line Item Properties

- <Line item tab1 name> Attachments
- Do not allow download of Attachments
- <Line item tab2 name> Linked Records
- <Line item tab2 name> Attachments
- Do not allow download of Attachments
- <Line item tab2 name> Linked Records

The **Detail Form Attributes** will be shown based on the **Line Item** tabs available in the selected business process. Additionally, users and groups can be restricted to download the attachments only from the business process record.

If a single user or group is selected in the left block, the selected user or group's existing restrictions will be shown.

The **Cancel** and **Save** options will remain disabled if you do not make any changes in the right block. If you select a user or group and change the restriction options, the **Cancel** and **Save** options will be enabled. The **Cancel** and **Save** options let you save or cancel the changes that you have made in the right block.

After you close the **Edit Restrictions** window, the restricted users and groups will be added in the **Record Properties** window.

You can select multiple rows in the **Users/Groups** section, edit the restriction checkboxes, and select **Save** or select **Cancel** your changes.

If multiple users or groups are selected in the left block, the existing restrictions will not be shown in the right block.

For **Attachments**, a user who has Download restrictions can view or access the attachment but cannot download or save the attachment.

Users/Groups window

When you select **Add**, the **User/Group** window opens. This picker window displays all the users and groups that are available and selected. After the users and groups are added, you

can select the users or groups (from the left block) and set the hide permissions for the form attributes (in the right block).

Note

Users or groups cannot be removed from the **User/Group Picker** window. You can use this picker window to add users and groups to the **Edit Restrictions** window. You can remove any added users or groups by selecting one or more rows in the **Selected Users/Groups** block.

After you add restrictions in the **Edit Restrictions** window, the left block displays the list of all users and groups with restrictions to the form attributes. When you select a form attribute such as **Audit Log** or **Comments**, the right block displays the list of all the restricted users and groups. A user who has restricted access to selected record attributes like **Audit Log**, **Comments**, or **Linked Mail** viewing in the business process record will not see those tabs.

Example: User U1 has the restriction, **Hide Upper Form Properties - Comments and Linked Records**. At runtime, when user U1 creates a business process record or opens an existing record, the **Comments** tab and the **Linked Records** tab will not be available in the record.

Attachments

If a user is only restricted from downloading attachments, the user can however view the attachments in the BP record in **User** mode. The **Download** option is removed from **Attachments** tab and the **Review** window.

In this case, a restricted user who views the attachment in the Native viewer will see the attachment open in read-only mode in Unifier Viewer.

A restricted user will not be able to receive the attachments through email notifications received from a business process record for which the user has restrictions to download attachments.

Line item Attributes

You can assign restrictions to users and groups for the Detail Form properties (**Attachments** and **Linked Records** for each **Line Item** tab). These additional Detail Form attributes will be seen only for the business processes that have the Detail Form defined in them.

The Detail Form properties seen in the Record Properties window will vary for each business process and is based on the design.

Users and groups can be restricted to download attachments from the **Line Item** tab, similar to the Upper Form, as described in the **Attachments** section above.

Additional information

Users and Groups who have permissions to **Hide Record Audit Log** and **Hide Task Statuses** are added to the restricted users and groups viewers list in the "Record Properties" tab, in the business process setup.

All the record level and Line Item tab restrictions are available for all business processes (company and project/shell levels) that support standard UI.

The restrictions are applicable to all users or creators, task assignees, step editors, record editors, and CC'd users who are part of the workflow in the record.

Visibility of tabs will be applicable to both Action and View Forms when the user has tab restrictions to the BP.

For non-workflow BPs, **Workflow Progress** (under the Upper Form properties) will not be available in the **Record Properties** tab both at the design and at the setup level.

For Company-level BPs, **Linked Mail** will not be available in the **Form Properties**.

For Simple and Text-type BPs, the option to hide the Detail Form properties will not be available.

For Document-type BPs, **Attachments** will not be seen in the Upper Form Properties and system defined tab in the Line Item Properties.

Note

The additional restrictions do not apply to bid users. Bidders will be able to see all the attributes even though the requestor has restricted access.

When certain form properties are hidden for a business process, those form properties are not shown in the Record Properties tab in the BP setup.

If users or groups do not have **View** permission, the BP record tabs will not be displayed at runtime. This is applicable to both company-sponsored and partner users.

Projects/shells do not show Rich Text type DEs in the following scenarios:

- When creating conditions for auto-creation elements in a BP setup.
- When editing Gate settings and setting up Gate Condition Elements.

Assigning restrictions to users and groups will impact their ability to see the **Record Properties** tab (tabs in the right pane, when the user opens a record) of the following nodes:

- Logs
- Drafts
- Tasks
- Master Log
- Company Log
- Single-Record BP Log
- Portal BP Log

Set Up Permissions for Record Properties Tab (Workflow)

To set up permissions for the **Record Properties** tab:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, select the [shell type], and open the [shell instance].
3. In the left Navigator, select **Setup**, select **Business Process**, and select the [BP name].
4. Open the BP (Workflow or Non-Workflow).
5. Select the **Records Properties** tab.

Set Up Email Notification for a Workflow BP

Use the **Notification** tab to set up automatic email notifications to users and groups whenever a workflow business process is created or modified, either manually, or via auto-creation, reverse auto-population, CSV, or integration.

If the business process has been designed to allow users to include additional users or groups in the email, the email notification will be sent to them as well. If you have enabled access to the Contact Lists feature, users can also take advantage of it when they create BP records, including those created using Bulk Action with Preview and BP templates.

The values that you must use to customize your email notification (these values appear in the drop-down fields of the **Custom Notifications** block in the **Notifications** tab) are set in the **Email Content** log (for more information, see *Creating Custom Email Template*). You can see the existing templates, or create templates, in the **Email Content** log. To create a template, select **Create** to open the **Create Template** window. Enter a template name and from the right pane (**Available Data Elements**) select the language and the elements that you want in your new template, and select **Save and Close**. Your changes will appear in the **Notification** tab within the fields listed in the **Custom Notifications** block. See the following for more information.

When a notification triggering event occurs, if users or groups have been identified, the system will notify the identified users or groups through the default system notification or the customized email template (specified in the **Custom Notifications** block in the **Notifications** tab).

To set up the email notification for a workflow BP:

Note

The system sends emails for reverse auto-population failures. There may be cases when email notifications are not sent. For such cases, you can find the reasons for the reverse auto-population (RAP) failures in the audit log of the business process record. In addition, the system occasionally generates error codes for reverse auto-population failures, which can be used to troubleshoot the failures.

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Business Process** to open the **Business Processes** log.
3. In the log, select and open the BP that you want to set up the email notification for. The **Business Processes Setup** window opens showing the following tabs:
 - **General** tab
 - **Settings** tab
 - **View Forms** tab
 - **Record Properties** tab
 - **Notification** tab
 - **Auto Creation** tab
4. Select the **Notification** tab.

Use the information below to complete the fields in the **Notification** tab. Select **Apply** to save your changes and **OK** to exit.

Send notifications to:

1. Click **Select** to select users or groups that should be notified whenever the workflow business process is created or modified.
2. Select one of the following options, if applicable:
 - **Notify Creator on Record Modification:** Select this option if you want the BP creator to be notified when the BP is modified.
 - **Notify Assignee of Record Modification:** Select this option if you want the step assignees to be notified when the BP is modified.
 - **Notify Cc on Record Modification:** Select this option if you want the step users or groups who have been Cc'd to be notified when the BP is modified.

Notification Triggering Events:

Based on your need, you can select all or some of the following triggering options that are listed under **Record Modification**:

- **Edit Upper Form:** Select this option if you want the system to send notification when the upper form of a BP record is changed.
- **Add General Comments:** Select this option if you want the system to send notification when a comment is added to a BP record.
- **Add/Remove Attachments:** Select this option if you want the system to send notification when an attachment is added to, or removed from, a BP record.

Attachments:

- **Include both record and line item attachments:** Select this option if you want the system to include both the record and the line item attachments.
- **Include record information as attachment:** Select this option if you want the system to include the record information as an attachment.

Custom Notifications:

- **Personal Tasks:** To select a custom email notification format for personal tasks.
- **Decline Tasks:** To select a custom email notification format for declining tasks.
- **Overdue Personal Tasks:** To select a custom email notification format for overdue personal tasks.
- **Messages:** To select a custom email notification format for messages.
- **Record Workflow Complete:** To select a custom email notification format for completed workflows.
- **Record Modification:** To select a custom email notification format for record modifications.
- **Contact Lists:** To select a custom email notification format for members of contact lists.

Note

The Contact Lists feature is not supported for records created through auto-creation.

Set Up Auto-creation for a Workflow BP

On the **Auto Creation** tab, you can set up this business process to automatically create another record or line item for this business process. You can also set up this business process to automatically create other business processes, planning items, or line items if the form includes a creator element.

① Note

- Because a Summary Payment Application (SPA) BP contains two sub-tabs—Line Item and Cost Breakdown—on the Detail Form, the system does not support I-Step or S-Step auto-creation of line items from a non-SPA BP to an SPA BP.
- If the Completion Policy for a step is set to **All-Consensus** and **Auto Creation** is enabled, automatic creation of the applicable items begins after *all* assignees have agreed on the action.
- During autcreation, if the value in a BP picker does not meet the filtering conditions that have been configured for the created BP, the value of the BP picker is not copied and is left blank. Additionally, in the Step Form of the created BP, any data elements that are configured to auto-populate from the picker are cleared.

For information about auto-creating business processes or planning items, see [Auto-creating BP Record or Planning Item Based on Conditions or Frequency](#).

The data elements of type Rich Text are not available to create conditions for auto-creation elements in a BP Setup (available by selecting BP Setup either through Company Workspace or the project/shell).

When a line item is auto-created (by using the line item auto-creation logic), the values in the fields on the line item that are based on a data picker in that line item will not be auto-populated.

① Note

When the system auto-creates a project-level Cost- or Commit-type business process (BP) that contains an upper (main) form reference to a company-level commit-type BP record (such as a Blanket Purchase Order [BPO]), the value is copied to the destination record if a matching DE exists. However, if a BPO Lineitem Picker value existed in the detail form of the source record, that value is not copied over to the line items of the auto-created record.

To set up auto-creation of a workflow business process:

1. Select the **Auto Creation** tab.
2. Under **Settings for auto creation of** *[name of the business process, planning item, or line item you are setting up]*, complete the following fields as shown in the table below (at the end of this topic).
3. Under the section **Settings for auto-creation of other business process records or line items**, select the creator element under the upper or detail form. The **Auto creation of line** identifies the business process or the line item that the creator element you selected will create.
4. (Not an option for line item creation.) In the **Assignee/Creator** field, click **Select**, and choose the name of the user or group who should assume ownership of the auto-created record.

The system validates whether the selected user's company exists. If not, the system adds the Partner Company as a Member Company.

5. (Not an option for line item creation.) In the **Duration** field, specify the duration of the workflow to ensure a due date is calculated and displayed for the auto-created record.
6. If you want the auto-created record to include attachments from the original (source) record, select the **Include Attachments** checkbox.
If you select this option:
 - Any record-level attachments made to the source record will appear at the record level of the destination record.
 - Any attachments made to the line items of the source record will appear at the line item level of the destination record.

Note

This step is not applicable for Document type business processes.

7. (Not an option for line item creation.) If you want to bypass the 1 step that this auto-creation normally creates, select the **Bypass initiation step during auto creation**.
If you select this option, the auto-created BP will skip the initiation step and will appear in the user's BP log at the appropriate step in the workflow. (For more information, see [Auto-creating BP Record or Planning Item Based on Conditions or Frequency](#).)
8. If you want to copy any records that are linked to the original record, select the **Copy Linked Records** checkbox.
9. (Not an option for line item creation.) If you want to group line items into a single record, select the **Enable grouping of line items when autocreating records from line item tabs** checkbox.
In the Group By field, click Select and select the data element (or elements) you want to group by. If the values in these data elements match for any of the line items, the system will auto-create a single record for them. For more information, see [Grouping line items into single records](#).

Copying line items is limited to a single picker or a single referenced data element.

Note

If you leave the Group By field blank, the system will auto-create a single record containing all the line items on the source record.

10. To create the conditions that will trigger the auto-creation, select the **Enable condition based auto creation** checkbox and continue as follows:

Note

If you leave this checkbox deselected, the BP, planning item, or line item will be available for manual creation only.

- a. To add a trigger condition, select the **Add** button. The Add Condition window opens.
- b. On the **General** tab, enter a name for the trigger and a description.
- c. Select the **Query** tab.

The **Query** tab is where you will define the conditions the data must meet before the system will auto-create the new business process record or line item.

In the upper section of the window, you can specify that a field on the business process form:

- Must meet a certain criteria or value
- Must meet a certain value based on a formula using the numeric fields on the form

Select the **Add** button to specify a condition for a field on the business process form. Select the **Add Formula** button to create a formula that the value of the field must meet. Use the information in the Queries section to complete the query.

Select the **match ANY condition (instead of ALL)** checkbox if the query can match any single condition to extract the information. If the query must match ALL conditions, leave this checkbox deselected.

In the lower section of the window, you can specify a date condition that will trigger the auto-creation. Use the information in the Queries section to complete the query.

Date condition triggers are not available for line item auto-creation.

About Date Triggers:

- If you want to create a continual date trigger condition, make sure you use the Date Trigger Condition section of the window to create it. Although you can also create a date trigger using a formula in the upper section of the window, the system will process the triggers differently.
- The conditions you specify in the upper section of the window will be processed only once, when the user selects the Send button on the form to send the form to the next step in the workflow. However, the date conditions you specify in the Date Trigger Condition section will be processed daily.
- This behavior is important to consider when you are creating a date condition that occurs in the future. A date trigger specified under the Date Trigger Condition section will be processed daily, and will, therefore, "catch" the trigger condition when the future date occurs.

d. Select **OK**.

11. Select **Apply** to save your changes, or OK to save and exit the window.

In this field:	Do this:
Setup	Specify the workflow setup that the auto-created business process or planning item should use.
Creator	Click the Select button and choose the name of the person or group who should assume ownership of the auto-created record.
Action	Specify the step in the workflow that should be used as the first step in the workflow of the auto-created BP or planning item records.

You can find the reasons for the auto-creation failures in the audit log of the business process record. In addition, on occasion the system generates error codes for auto-creation failures which can be used to troubleshoot the auto-creation failures.

Workflow Setup in Company-Level BPs or Project-Level BPs

This section explains how to set up workflows. Workflow setups can be time-consuming. The system offers other options of copying workflow setups. To use these options, see [Copy Workflow Setups From Other Schemas](#).

1. Use any of the following methods to set up a workflow:
 - For a company-level business process, go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Company Workspace**, and then select **Business Process Setup**.
 - For a project- or shell-level business process, go to the shell tab, and switch to **Admin** mode; in the left Navigator, select **Setup**, and then select **Business Process**.
 - To set up a workflow within a template at the project/shell-level, go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the [shell instance]; in the left Navigator, select **Setup**, select **Business Process**; in the right pane, select the applicable business process.
2. In the left Navigator, select **Workflow Setup**, and in the right pane, double-click the name of the workflow you want to set up.
3. In the **Workflow Setup** window of the selected workflow, select the **General** tab:
 - a. In the **Setup Name** field, enter a workflow business process setup name.
 - b. In the **Description** field, enter an optional description of the workflow setup.
 - c. In the **Status** field, Select *Active* or *Inactive*.
 - d. In the **Error Check** field, indicate whether the workflow is to be checked for errors when the workflow setup is complete.
 - e. In the **Default format of record information attached to email notification** field, select *PDF* or *Custom*. If you select *Custom*, select **Add** to choose the custom print format.
4. In the **Workflow Setup** window of the selected workflow, select the **Settings** tab to configure the workflow details. For more information, see [Define the Business Process Workflow](#).

You can filter assignees (**Assignees** block) and use some specific conditions on filtering the users.

To create the conditions, you must choose among the list of the user attributes that are available. After you select an assignee, from the **Assignee** drop-down list, for the selected workflow step, select **Define** (next to the **Additional conditions to filter assignees** option) to define the additional conditions in the pop-up window. When finished, select **Add**, select the drop-down field, and select:

- User Attributes from the company (**Company Workspace**): Represented with a prefix "Company/"
- User Attributes defined at project/shell level: Represented with a prefix "Shell/"

The same conditions apply to **Allow Cc** field.

If the BP design supports inclusion of additional task assignees or CC users, the **Settings** tab includes two additional options, **Add additional assignees from upper form and line item tabs** and **Copy additional users from upper form and line item tabs**, that you can enable if applicable. (The **Add additional assignees from upper form and line item tabs** option is not available for Creation and End steps. The **Copy additional users from upper form and line item tabs** option is not available for the Creation step.)

Note

When a record is routed to the next step in the workflow, the assignee list is always pulled from the subsequent step. For example, if the record gets routed from a Review step to an Update step and the additional task assignees and copied users are to appear for the Update step, the design for the Update step and the option for the Update step in the workflow setup must both be enabled.

5. In the **Integration** tab, **Workflow Business Processes** field, select the workflow recipe for an action in a workflow step.

Note

The **Integration** tab displays only if an Oracle Integration connection has been set up and enabled for your organization.

6. When the setup is complete, return to the **General** tab, and select **Error Check**. Any errors identified by the error check display in the **Error** window. The setup is not activated until all errors are resolved.

If there are no errors, select **OK** in the **Setup** window. You will be prompted to activate the BP.
7. Select any of the following options:
 - Select **Yes** to activate the business process (BP) and make it available to users.
 - Select **No** to keep the business process (BP) inactive until a later date.

Define the Business Process Workflow

In the **Settings** tab of the **Workflow Setup** window, you can configure the workflow details. These settings are applicable to project-level and company-level workflow business processes. The workflow step settings are arranged in a tree structure, showing all the steps. From here you can specify the following:

- [Overall Workflow Settings](#)
- [Settings for Standard Workflow Steps](#)
- [Settings for Conditional Routing Steps](#)
- [Settings for Auto-Create Steps](#)
- [Settings for Sub-Workflows](#)

Alternatively, you can also [Copy Workflow Setups From Other Schemas](#).

Overall Workflow Settings

The following describes the settings for the overall workflow. Select the top option in the left navigation pane to access these settings. Use the scroll bar on the right to scroll down the window and view all fields.

- **Enable Workflow Duration:** When **Yes** is selected, records created with this instance will be marked as late when the defined amount of time passes.
- **Workflow Duration:** You can optionally set the duration of the workflow.

- **Override Workflow Due Date:** Use this option if you want to permit users to override the due date for the workflow. Choices include:
 - **Yes:** Select this option if you want to permit users to edit the due date for the workflow in the Creation step, or if you are using Scope Management and have selected Enforce Activity Finish Date for the Record Due Date for the activity business process. For more information, see [Setting Up Scope Management for Activities](#). Also, a due date specified through any of the following methods will be used:
 - * File Imports (CSV or Microsoft Excel)
 - * Master Log Bulk Imports of a business process through the Template for Record Creation option from the Actions menu
 - * Input request of the following REST Services:
 - * Create BP Record (V1 and V2)
 - * Create BP Record with Attachment (V1 and V2)
 - * Bulk Create Workflow BPs (V2)
 - **No:** Select this option to use the due date based on the Workflow Settings only. The due date cannot be edited if the work has started, or the work has moved to the next step (is in-flight) in the workflow process. Also, any due date provided through any input file or API requests will be ignored.
- **Project Phase (Project-level BPs only):** Setup is valid only during the specified project phase. This is not applicable for company-level BPs.
- **Notify users or groups on workflow completion:** Selected users or groups will be notified after the workflow is complete.

Behavior of the Due Date (due_date) Field

In the **Workflow Settings** field in the **Workflow Setup** of a BP, if the **Override Workflow Due Date** field is set as **Yes**, you *can* edit the due date in the creation step. If the **Override Workflow Due Date** field is set as **No**, you *cannot* edit the due date in the creation step. Also, you cannot edit the Due Date if the work has started or the work has moved to the next step (is in-flight) in the workflow process.

When you create workflow BP records through file imports (CSV or Microsoft Excel), the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input file is ignored. Also, when you update workflow BP records through file imports (CSV or Microsoft Excel), the system uses the Due Date that was based on the **Workflow Settings** and ignores the Due Date provided in the input file.

Settings for Standard Workflow Steps

This setup is for standard workflow steps. The **Settings** tab displays the steps that are available for the selected BP and therefore will vary depending upon how the BP has been designed. Not all selections discussed below will be available for all workflow steps. In addition, depending on the BP design, not all fields will be editable. The following is primarily an example of a creation step. Use the scroll bar on the right to scroll down the window and view all fields.

Select a workflow step to access these settings.

About Create and End Steps

The Create and End steps in a workflow have unique characteristics you should be aware of during the design and setup of the workflow.

For the Create step:

- In uDesigner:
 - You can rename the Create step to something else if you want.
 - You can place only outgoing links on the Create step.
 - You can attach only action forms to the Create step.
 - You cannot send a link back to the Create step. If the workflow requires that a form be sent back to the creator (Create step), add a separate "back step" or "revision step" that will send the form back to the creator.
- In Unifier Administration:
 - You cannot "Cc" users on the Create step.
 - A workflow cannot send a link back to the Create step. If the workflow requires that a form be sent back to the creator (Create step), the workflow design should include a separate "back step" or "revision step" that will send the form back to the creator. If your workflow includes such a "back step," specify **match step <Creation>** for the Assignees on that step.

For the End step:

- In uDesigner:
 - You cannot rename the End step.
 - You can place only incoming links on the End step
 - You can attach either an Action Form or a View Form to the End step. However, if a BP has different workflows, you can select a different form (Action or View) in the End step of each workflow.
- In Unifier Administration:
 - You can "Cc" users on the End step.
 - You can send the form to the editors who have been assigned to the form.
 - You can add comments to a business process at the End step, and also at any status in a workflow, including "terminated."

In this field:	Do this:
Step Name	You can select the link to view a graphical representation of the workflow, with the current step highlighted. Be aware that workflows can often be exceptionally large. If you are viewing a large workflow, you can enlarge the canvas screen to make it easier to see all the steps to the workflow progression. To enlarge the canvas, you can drag the window sides until the workflow fits in the window, or you can quickly maximize the canvas. To maximize the canvas, select the icon in the upper-right corner of the window. To restore the canvas window to its normal size, select Restore.
Description	Enter an optional description to help identify the workflow.
Duration	Choose the time length for this step.
Override Task Due Date	Allows user to override due date for an individual task.

In this field:	Do this:
Allow Assignees to Decline Task	Select Yes if you want the assignees to have the ability to decline an action on an assigned task.
Enable Step for Integration	Select the radio button if you want this step to be available for integration with an external system, such as Web Services. If you make the step available for integration, the user can use the external system to view a read-only copy of the BP at that step. Note If you select this option, the Completion Policy field (see below) will be set to "Single," and the Assignment Policy field for the following step must be set to "Preassigned."
Allow Contact Lists	To allow users to select a contact list while routing a record from the current step to the next step, select Yes. To allow users to enable or disable the inclusion of attachments in notifications sent to contact list users, navigate to the Workflow Configuration node in the Settings Tab. In Actions, select Yes for Allow Contact List. Users can then check or uncheck the checkbox Include attachments for contact list users. Note - If the Completion Policy is All-Majority or All-Consensus, the system merges the contact list that each assignee has chosen and sends notification after the record moves to the next step in the workflow. - If Replace attachments with links is selected, no attachments or download links will be included in email notifications sent to contact list users.
Include attachments for contact list users	If you chose Yes for Allow Contact Lists , attachments included in notifications to contact list recipients will mirror those sent to assignee and CC users.
Assignment Policy	For User Select (default), the individual who creates a record (such as an invoice) from this workflow instance can choose the users to assign to this task from the list of assignees for this step. For Preassigned , every user on the assignee list is automatically assigned to the step when the record is created.

In this field:	Do this:
Assignees	Select the users to assign to this step. These users will receive task notifications, instructing them to act at this step. When you click Select, you can choose one these options: • User Picker: The system displays the User/Group Picker window. Choose one or more users or groups to add as assignees. • Dynamic: Choose a step in the workflow from the Select Step pop-up window. The assignees from that step become the assignees used on this step. You cannot choose Dynamic when adding assignees to the first step (Creation) in the workflow.  Note The system validates whether each selected user's company exists. If not, the system adds the Partner Company as a Member Company. You can constrain the list of assignees for this step by selecting the Additional conditions to filter assignees check box. To constrain the list of assignees, you must create a query to filter the assignees using criteria you specify. To do this, select the Define button and specify a field comparison. For information on creating this type of query, use the information in the Queries section to complete the query. If you filter the assignees, the group names will not be visible to users in the Workflow Action Details dialog. The filter conditions defined are used, as AND/OR, depending on the checkbox: Show results matching any condition (instead of All)

In this field:	Do this:
Allow Cc	Allows assignees to add cc users who will receive a view-only copy of the BP record. Choose one of the options: • No: Does not allow sending copies to other users. • Yes: Click Select to create the list of users or groups from whom the BP users can choose to Cc. (This option also activates the Allow Add Cc functionality.) • Preassigned: Click Select to choose the users who will be automatically cc'd. No other users can be copied. • Preassigned and Allow Add Cc: Click Select to choose the users who will be automatically cc'd. The Allow Add Cc option is set to Yes.  Note You cannot allow Ccs on the Create step. You can constrain the list of Cc users for this step by selecting the Additional conditions to filter Cc users checkbox. To constrain the list of Cc users, you must create a query to filter the Cc users using criteria you specify. To do this, select the Define button and specify a field comparison. For information on creating this type of query, use the information in the Queries section to complete the query. If you filter the Cc user list, the group names will not be visible to users in the Workflow Action Details dialog. The filter conditions defined are used, as AND/OR, depending on the checkbox: Show results matching any condition (instead of All)
Allow Add Assignees	Allows assignees to add additional assignees in addition to those defined in the Assignees field to the current step. Assignees can add the additional assignees <i>before accepting the task</i>. This is done by selecting the Edit menu, and choosing Add Assignees to Current Step. For example, user A has been sent a BP for review. User A wants to add user B as an assignee to the review step as well. Before selecting Accept Task, user A selects Edit, selects Add Assignees to Current Step, and adds user B. User B is notified (depending on email preferences) of the new task. Both user A and user B can accept the task and participate in the review step of the workflow.  Note You cannot add assignees on the Create step.

In this field:	Do this:
Allow Add Cc	This option has two functions: 1. When the Allow Cc field is set to Preassigned and Allow Add Cc, this option is set to Yes automatically. It enables BP users at runtime to copy additional users on a BP step that already has a preassigned cc user. This is done on the action form of the BP during the regular workflow step by selecting the Cc button. Click Select and choose the users/ or groups that can be copied. 2. This option becomes available (choose Yes or No) if Allow Cc is set to Yes. Similar to Allow Add Assignees, this option allows assignees to send a copy of the current step of the BP to additional users in addition to those defined in the Add Cc field. Assignees can add the additional cc users before accepting the task. This is done by selecting the Edit menu and choosing Copy Users to Current Step. For example, user A has been sent a BP for review. User A wants to add user B as an assignee to the review step as well. Before selecting Accept Task, user A selects Edit, selects Add Assignees to Current Step, and adds user B. User B is notified (depending on email preferences) of the new task. User A can accept the task and participate in the review step of the workflow. User B can review the view-only copy.  Note You cannot add Ccs on the Create step.

In this field:	Do this:
Step Editors	Optionally, you can define one or more editors per each defined step in the business process workflow setup. Editors are users who can edit the business process without being granted explicit record-level permission or as assignees of the step. This allows users other than the assignee to edit the business process record. If you are an Editor on a business process step, you can open and edit any record on the step. Editors can be added on these BP types: • Line Item • Cost (all types, including Lease and Line Item with Multiple Codes) • Document • Simple • RFB • Text • The Editor functionality has these attributes: • The user who is designated as an editor must have a minimum of View User Records to the BP log in question. • All edits are done through the BP Log. • Editors cannot edit a workflow record until the task assignee accepts the task and saves the draft. • Editors cannot be defined on the creation step of a business process. • Editors can be defined on the end step. • Editors can be defined on a workflow step only if the Completion Policy is Single. (The system will generate an error if Completion Policy is set to All-Majority or All-Consensus.) • Editors on a task receive notification each time a draft is created. • If multiple editors and the assignee are editing the business process record draft, the data saved by the last update will overwrite all previous updates. • Edits performed on the End step of a workflow business process affect the record directly, as no draft exists. • Edits that occur on the end step are captured in the audit listing the editor who performed the edit. • Edits performed by record editors appear in the Audit log. Note You cannot assign editors on the Create step.

In this field:	Do this:
Step Revisiting	If a step is rejected and sent back for clarification or editing, this option determines to whom the BP can be sent back (which assignees will be available for selection): Include only previous action takers: Only the assignee users who were selected when the workflow moved into that step originally are eligible to be reselected. Include all step assignees: All assignee users are eligible to be selected. Note You cannot specify step revisiting on the Create step.
Completion Policy	As an administrator, you will set a completion policy on each step in a workflow. This policy determines when the step is complete and where the step proceeds from there. For more information, see About Completion Policies, Workflows, and Resolving Actions. Choose one of the following: • Single: If any assignee completes the task, no matter which action is taken, the record moves forward to the next step. • All-Majority: All assignees are required to respond. If there is no clear majority, the system uses the resolving action to determine what path through the workflow to take. • All-Consensus: All assignees are required to respond. If there is no consensus (all must agree on the action), the system uses the resolving action to determine what path through the workflow to take. Note • You cannot assign a Completion Policy on the Create step. • If Completion Policy is set to All-Consensus and Auto Creation is enabled, automatic creation of the applicable items begins after <i>all</i> assignees have agreed on the action.

In this field:	Do this:
Advance workflow when next step is determined	Select this option if you want to allow the user to choose that a step be completed without all assignees having to act on it, if the result can be determined without the assignee action. This is to prevent users unnecessarily waiting to act on the record before moving it to the next step. Note If you select the Completion Policy as All-Majority or All-Consensus, the system enables this checkbox. The checkbox is deselected by default.
Resolving Action	This moves the step to either a following step, a previous step, or a conditional step that essentially "re-addresses" the task. This step must be completed before the workflow can continue. The assignees on this resolving action step can include the original task assignees and can also include new assignees. Note You cannot assign a resolving action on the Create step.
Overdue Policy	You can choose to send late notifications to all assignees if the step passes its duration. Note You cannot assign an overdue policy on the Create step.

In this field:	Do this:
Comments	For the Creation step, you have the option to select Do not allow creators to add hidden comments to prevent users from adding hidden comments. For steps other than Creation, other comment-related options are available. These other options refer only to the general comments on BP forms. Allow assignees to hide/unhide their own comments: Allows users to show or hide their own comments. The comments will remain as part of the record, and administrators and others with permissions can view the comments, which are not visible to others without the view permission. Allow assignees to delete their own comments: Allows users with permission to delete comments that they previously added to the BP record. Allow assignee to delete/hide/unhide all comments: Allow assignee users in the specific workflow step to hide, show, and delete their own comments and comments added by other users comments added in the previous workflow steps. It also allows users to update comments added in previous steps of the workflow. Allow CC users to add general comments: Allows users copied on a step to add comments on the selected workflow step. Not available on the end step. Allow CC users to add hidden comments: Allows users to hide comments that they add to a business process. This option is available only if Allow cc users to add general comments is selected. Task assignees can always add general comments without accepting the task.

In this field:	Do this:
Email Response: Enable response via email	By default, this checkbox is deselected. When enabled, if a workflow reaches the current step, the system sends an email and the user can respond to the email (in Unifier). The checkbox appears on all workflow steps other than the creation step. The email that the user receives includes hyperlinks to workflow actions. When you are taking an action in a Workflow by way of email, if you include attachments, the attachments can be seen under the General Comments section of the BP record. Note - You cannot enable email response on the Create step. - To enable the attachment of files to email responses to workflow actions, this option must be selected as well as the Add Attachments option on the Options tab in the Action Form design.
Email Attachments: Include both record and line item attachments Include record information as attachment	Select to specify the content and format of email attachments. You can include business process record and line item attachments, as well as business process record information. Also, you can override the attachment format set in the General tab if necessary. Note You cannot enable email attachments on the Create step.

In this field:	Do this:
Override default format	If you have specified a default record format on the General tab, you can use this checkbox to override the default format. For example, you can use the General tab to specify that the default record format for both email notifications and records saved in the Document Manager be in PDF format. If necessary, you could then use the Override default format checkbox to override the format and choose Custom for the notification only.  Note Hidden comments on a particular step in the Workflow and permission settings applied to certain data in the UI are retained in the custom print output.
Email Content	You can add additional information that will be sent out as part of task notification.  Note You cannot add additional information on the Create step.
Cash Flow Default Template	This option only appears in CBS code-based Base Commit business processes. It lets you enable the auto-creation of a commitment-level cash flow curve at runtime for the business process record. The curve is based on the selected commitment-level cash flow template and is created upon being sent from the step. Select Add and choose a template. For more information, see Setting Up Auto-Creation of Cash Flow Curves from Contracts.
Additional Information Save Record information to Document Manager	Select this checkbox if the record information (including BP comments and attachments) should be automatically saved at this step in the Document Manager.

About Completion Policies, Workflows, and Resolving Actions

As an administrator, you set a completion policy on each step in a workflow. This policy determines when the step is considered complete and how the workflow proceeds.

Completion Policies

The completion policies include:

- **Single:** Any single user can accept a task and complete it, causing the record to move to the next step.

- **All-Majority:** All assignees must respond to the task, and a majority must agree on the action for the record to move forward. If there is no majority, the system uses a *resolving action* to determine the next step.
- **All-Consensus:** All assignees must respond and agree unanimously on the action that moves the record forward. If consensus is not reached, the system uses a *resolving action* to determine the next step.

Note

- If the Completion Policy is set to **All-Consensus** and **Auto Creation** is enabled, automatic creation of the applicable items begins only after *all* assignees have agreed on the action.
- For **All-Majority**, if **Advance workflow when next step is determined** is enabled, the workflow moves forward as soon as the majority agrees, even if not all have acted.
- For **All-Consensus**, if **Advance workflow when next step is determined** is enabled, the workflow moves forward as soon as one assignee completes the resolving action, two assignees take different actions, or all assignees take the same action (which might differ from the resolving action).
- For both **All-Majority** and **All-Consensus**, if an assignee is working on a draft and consensus or majority is reached, the draft is deleted, but edits or new line items are retained in the next step.

Workflows

The workflow-step statuses, which are internal to the system, display the current status of each step relative to its completion policy. The possible statuses are:

- **Not Started:** The assignee has not accepted the task.
- **In Progress:** The assignee has accepted the task.
- **Locked:** This status is used when the step has a single completion policy and one of the assignees accepted the task. This status denotes those assignees who were also assigned to the task, but because of the single completion policy, the task was locked and these assignees no longer have access to it.
- **View Only:** This status indicates that this user was cc'd on the task but is not expected to take action.
- **Completed:** This status is given to an assignee's action if the task was finished and required no resolving action. Only one **Completed** status is possible per step.
- **Closed:** This status is given to an assignee's action if the task was finished but triggered a resolving action. The step the action moves to for resolution displays a status of **Not Started**. The frequency of **Closed** status indicates the number of times the step has been revisited.

Resolving Actions

A *resolving action* determines the path a workflow follows when agreement is not reached per the completion policy (for example, lack of majority or consensus). The workflow can:

- Move to a following step
- Return to a previous step
- Branch to a conditional step, re-addressing the task

The resolving action step must be completed before the workflow can continue. Assignees can include both original and new task assignees.

Settings for Conditional Routing Steps

Conditional routing steps are child nodes of the steps that lead to the condition routing. Auto-routing steps are shown with a diamond in front. Set up routing conditions on these steps.

Remember that the next step in the business process workflow will be dependent upon the value entered on the BP for the data element. When you are finished setting up this conditional routing step, the Settings tab will show two steps that represent the two options for the step that follows this auto-routing step. You define both of them, but the BP will follow just one of them based on the trigger.

In this field:	Do this:
Condition Name	Name of the condition. Can be configured for each setup.
Resolving Condition	Select this checkbox if this routing action goes to a step that is meant to resolve the condition.
Operator	AND: All the conditions that are defined should be satisfied to satisfy a condition. OR: At least one of the conditions should be satisfied to satisfy a condition.
Trigger Elements	Elements that are selected as part of design. Value of these elements will be resolved to route workflow. Can be one or more elements depending upon design.

Settings for Auto-Create Steps

Some steps include the ability to auto-create other records, depending on the status of the previous step. It is displayed as a child node from which the link is drawn out.

Note

- For document-type BPs, the auto-creation of BP records will also copy attachments from the original record.
- Because a Summary Payment Application (SPA) BP contains two sub-tabs—Line Item and Cost Breakdown—on the Detail Form, the system does not support I-Step or S-Step auto-creation of line items from a non-SPA BP to an SPA BP.

In this field:	Do this:
Auto-create records	Choose one of the following: As per workflow design: Auto-create BPs that were configured as part of the design. Based on user selection during execution: During execution, user will be given a list of BPs that are selected under workflow design in uDesigner. User can choose which BP record should be auto-created. Process list: Select a list of BPs for which the system will auto-create records during execution.

Settings for Sub-Workflows

A sub-workflow is a mini workflow within a main workflow and is part of the uDesigner workflow design. It is a grouping of one or more steps. A sub-workflow node will be child node of the main workflow and a sibling of other steps and sub-workflow nodes.

In this field:	Do this:
Sub-workflow Name	You can select the link to view the graphic of the sub-workflow.
Description	Capture more information about the sub-workflow.
Enable Sub-workflow duration	Similar to the main workflow. A duration can be set for the group of steps.
Overall Sub-workflow duration	Similar to the main workflow. Overall duration for the group of steps.
Override Sub-workflow due date	Similar to main workflow. User can override sub-workflow due date during execution.

Workflow Setup Node

Use the **Workflow Setup** node to:

- Add or edit workflow setups for the selected BP
- Choose a workflow design and assign a name for the workflow setup
- Determine the workflow status
- Select the record format to be used for Notification and Document Manager
- Set the details for workflow settings such as Phases, and select users or groups who are to be notified when the workflow is complete

Note

The system validates whether each selected user's company exists. If not, the system adds the Partner Company as a Member Company.

To access the workflow setup fields:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the [shell instance].
3. In the left Navigator, select **Setup**, select **Business Process**, and open the applicable [BP].
4. In the left Navigator, select **Workflow Setup**.

The **Workflow Setup** window has the following tabs:

General tab

Use the fields in this tab to:

- **Setup Name:** Assign a name for the workflow setup

- **Status:** Select the status of the workflow, and select **Error Check**.
- **Default Record format for Notification and Document Manager:** Select which record format the system should use for Notification and Document Manager (you can also specify this per step as indicated in the previous section.)

Settings tab

Use the fields in this tab to set the details of the workflow and workflow steps. This tab is divided into two panes. The left pane shows the workflow and workflow steps. The right pane (**Workflow Configuration**) shows the properties of the workflow and workflow steps.

When you select the top node **<Workflow Name>** from the left pane, you can set the following parameters in the **Workflow Configuration** (the right pane):

- **Workflow Settings**
 - **Enable Workflow Duration**
 - **Workflow Duration**
 - **Override Workflow Due Date**
- **Phases**
 - **Allowed in all phases**
 - **Allow only in phases**
- **Additional Information**
 - **Notify users or groups on workflow completion:**
Lets you select users or groups who will be notified when the workflow is complete.

Behavior of the Due Date (due_date) Field

In the **Workflow Settings** field in the **Workflow Setup** of a BP, if the **Override Workflow Due Date** field is set as **Yes**, you *can* edit the due date in the creation step. Also, a due date added or updated through file imports (CSV or Microsoft Excel) will be used. If the **Override Workflow Due Date** field is set as **No**, you *cannot* edit the due date in the creation step. Also, you cannot edit the Due Date if the work has started or the work has moved to the next step (is in-flight) in the workflow process.

When you create workflow BP records through file imports (CSV or Microsoft Excel), the system currently sets the Due Date automatically based on the **Workflow Settings**; the Due Date provided in the input file is ignored. Also, when you update workflow BP records through file imports (CSV or Microsoft Excel), the system uses the Due Date that was based on the **Workflow Settings** and ignores the Due Date provided in the input file.

As mentioned above, the **Custom Notifications** lets you determine whether the default notification must be sent or a customized one (determined by the email notification elements selected on the view form in the BP design).

If you select a user or group in the **Send Notifications to:** field (in the **Notification** tab) and do not select a user or group for the **Notify users or groups on workflow completion** field, the system will only send the email notification to the selected users (indicated in the **Send Notifications to:** field) if one of the following triggering events occur: **Edit Upper Form**, **Add General Comments**, or **Add/Remove Attachments**.

The **Custom Notifications** fields:

- Are used only for specifying what type of email notification template to use for different email notification types
- Are not related to any of the triggering events

If you want an email notification to be sent when the workflow is complete, or at the end step, configure this when you are setting up the workflow. You can determine the step-specific notifications that are to be triggered when the BP record moves from one step to the next.

When you select a sub-node **<Step Name>** from the left pane, you can set the following email notification options in the **Email Notification** block:

- **Email Response: Enable response via email**
To allow the user to respond to an email.
- **Email Attachments:**
To allow the user to:
 - **Include both record and line item attachments**
 - **Include record information as attachment**
 - * **Override default format**
- **Format:**
To allow the user to select a print format:
 - **PDF**
 - **Custom**
- **Email content**
To allow the user to include the email content.

Note

Within all the steps, the **Additional Information** block lets you select to **Save Record Information to Document Manager**.

Integration tab

The Integration tab displays only if Oracle Integration is enabled in the **Company Workspace (Admin mode)** by establishing a connection that sets the **Enable Integration** field to **Yes**. (For more connection-related information, see [Enabling Oracle Integration Connection](#).) If you plan to use integrations from Oracle Integration in workflow BPs, select the specific integration name for an action in a workflow step.

Note

- A workflow step may contain multiple actions.
- Actions and steps may differ for each workflow setup.

Copy Workflow Setups From Other Schemas

Some workflows can encompass many steps, as well as conditional routing and sub-workflows. Most of your time as administrator can be spent setting up the workflow schemas in your company. To make setting up workflow schemas easier and faster, the system provides you the option of copying existing setups from other workflow schemas.

For example, if you have set up a large schema for an approval process that includes separate workflows for different provisos, you can copy the setup of one schema to another workflow

and make incidental changes where necessary, rather than set up the entire workflow schema again.

Or, if you have a complex schema for setting up a project/shell, you can copy that schema to set up a different project/shell in your same Unifier environment.

You can copy a setup from here:	To here:
A business process in the Company Workspace	The same business process in the same Company Workspace If any users or groups are defined in the setup, they will be copied over if they do not exist; matching will be done on the name.
A project template for a business process	Another project template for the same business process If any users or groups are defined in the setup, they will be copied over if they do not exist; matching will be done on the name.
A business process in a project	A project template for the same business process If any users or groups are defined in the setup, they will be copied over if they do not exist; matching will be done on the name.
A shell template for a business process	Another shell template (of any shell type) for the same business process If any users or groups are defined in the setup, they will be copied over if they do not exist; matching will be done on the name.
A business process in a shell	A shell template (of any shell type) for the same business process If any users or groups are defined in the setup, they will be copied over if they do not exist; matching will be done on the name.

Business Processes Must Match

In all cases, the business process name, type, sub-type, classification, studio owner, and version number must match or the copy function will fail.

About the version number

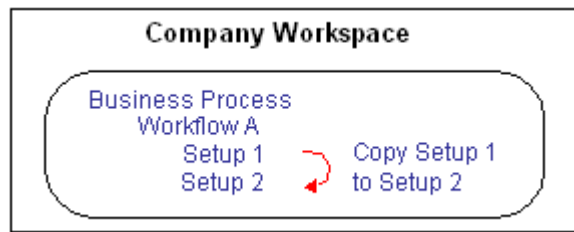
The number in the Version column of the business process log shows the uDesigner version number. This number represents the number of times the design has been changed from Draft mode to Complete.

The uDesigner module automatically increments the version number whenever a design is returned to Draft mode. When the draft is changed to Complete, it shows that number. This version of the design in uDesigner may or may not be the version that is active in Unifier.

The version number that appears on this log in Unifier shows the last deployed version that was imported. This number may not match the version number uDesigner, but it is the last active version of the design in Unifier. The version number of the BP you are copying from must match the version number of the BP you are copying into.

At the Company Level, Copy a Setup from Another Setup in the Same BP

In this copy action, you copy a setup to another setup in the same business process in the same company workspace.



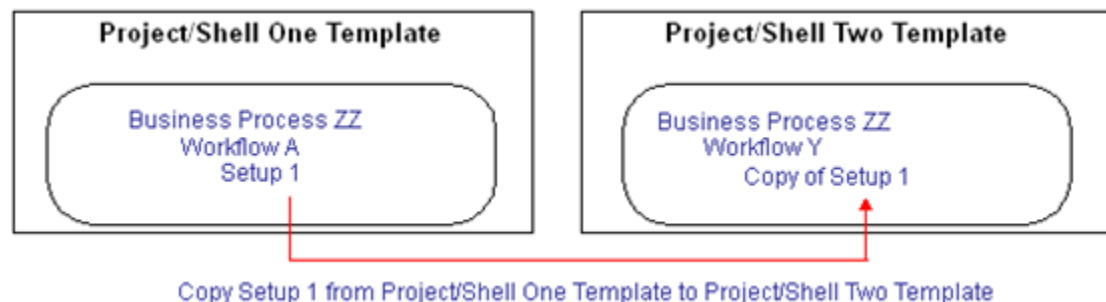
To copy a workflow setup:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Business Process Setup**.
3. On the right pane, double-click the business process to open it.
4. In the left Navigator, select **Workflow Setup**.
5. In the right pane, select the setup you want to copy, and select **Copy**. The Workflow Setup window opens.
6. On the **General** tab, enter a name and description for the new setup and make the status **Active** or **Inactive** as necessary.
7. Select **Apply**.
8. Select the **Settings** tab. The **Settings** tab opens, showing the workflow of the setup you copied.
On this tab, you can make any changes you want to the setup you copied to accommodate the new setup.
9. To save the new setup, select **OK**.

If the setup **Active** is active, the system performs an error check on the new setup and notifies you of any errors it encounters. Otherwise, the error check will not occur until the setup is activated.

Copy a Setup from One Project/Shell Template to Another

In this copy action, you copy a setup from a business process in one project/shell template to the same business process in another project/shell template.



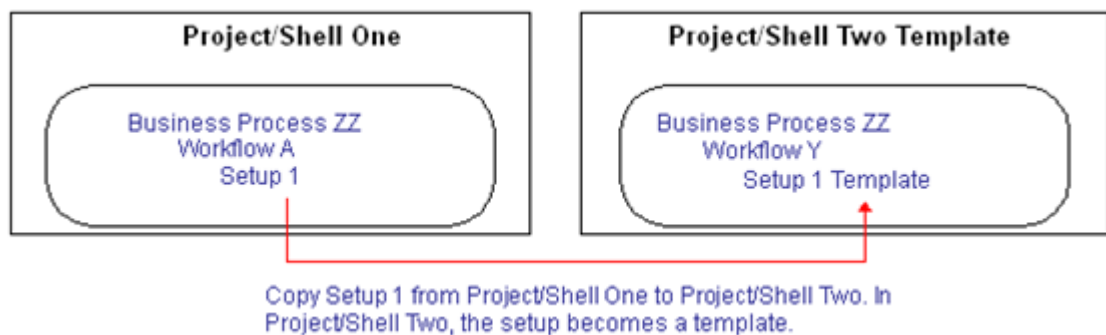
To copy a setup from one project/shell template to another:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template] that contains the BP you want to copy the setup into.

3. In the left Navigator, select **Setup**, and then select **Business Process**.
4. In the right pane, double-click the name of the business process into which you want to copy the setup.
5. In the left Navigator, select **Workflow Setup**.
6. Select **Copy From**, and choose **Templates**. A copy window opens, listing all the workflow templates for that BP that exist in all the projects and shells in your environment.
7. Select the template you want to copy, and select **Copy**. The Workflow Setup window opens.
8. On the **General** tab, enter a name and description for the new setup, and make the status **Active** or **Inactive** as necessary.
9. Select **Apply**.
10. Select the **Settings** tab. The Settings tab opens, showing the workflow of the schema you copied.
On this tab, you can make any changes you want to the setup you copied to accommodate the new setup.
11. To save the new setup, select **OK**.
The system adds the template to the workflow setup log. If the setup **Active** is active, the system performs an error check on the new setup and notifies you of any errors it encounters. Otherwise, the error check will not occur until the setup is activated.

Copy a Setup from a Project/Shell to a Template

In this copy action, you copy a workflow setup from a business process in a project/shell and make it a template in the BP you copy the setup *into*.



To copy a setup from a project/shell to a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]** that contains the BP you want to copy into.
3. In the left Navigator, select **Setup**, and then select **Business Process**.
4. In the right pane, double-click the name of the business process into which you want to copy the setup.
5. In the left Navigator, select **Workflow Setup**. The right pane lists the workflow setups that currently exist for this business process.
6. Select **Copy From**, and choose **Project/Shell**.

A copy window opens, listing all the workflow setups for that BP that exist in all the projects and shells in your environment.

7. Select the setup you want to copy, and select **Copy**. The Workflow Setup window opens.
8. On the **General** tab, enter a name and description for the new setup, and make the status **Active** or **Inactive** as necessary.
9. Select **Apply**.
10. Select the **Settings** tab. The Settings tab opens, showing the workflow of the setup you copied.
On this tab, you can make any changes you want to the setup you copied to accommodate the new setup.
11. To save the new setup, select **OK**.

The system makes a template of the setup you copied and adds the template to the workflow setup log. If the setup **Active** is active, the system performs an error check on the new schema and notifies you of any errors it encounters. Otherwise, the error check will not occur until the setup is activated.

Setting Up Business Processes with Oracle Integration

You can set up workflow and non-workflow business processes (BPs) that use integrations from Oracle Integration.

Prerequisites

Ensure the following:

- Oracle Integration is provisioned. Otherwise, complete the Initial Oracle Integration Setup task.
- You have the relevant integration permissions to administer or use Oracle Integration in Unifier. To set these permissions, go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **User Administration**, and then select **Access Control**; in the right pane, expand **Administration Mode Access**, expand **Integrations**, and select **Oracle Integration Cloud**.
- You have added users and groups with required permissions to create, route (for workflow BPs), or submit (for non-workflow BPs) records for business processes.
- In the **Business Process Setup** configuration of non-workflow business processes (BPs), set up the **Integration** tab to be visible in the **Record Properties** tab.
 - For non-workflow BPs, see [Set Up Record Properties for Non-Workflow Business Processes](#).
 - For workflow BPs, see [Set Up Record Properties for Workflow Business Processes](#).

Procedure

To set up workflow or non-workflow BPs that use integrations from Oracle Integration, use the following steps.

Setting Up Workflow BPs with Integrations from Oracle Integration

To use integrations from Oracle Integration in workflow BPs, set up workflow BPs using any of the following methods:

- Set up a shell template for workflow BPs:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the [shell instance].
 3. In the left Navigator, select **Setup**, select **Business Process**, and open the applicable [BP].
 4. In the left Navigator, select **Workflow Setup**.
 5. In the **Setup** window, enter information as specified in [Workflow Setup Node](#).
- Set up company-level workflow BPs:
Go to the **Company Workspace** tab, and switch to **Admin** mode.

In the left Navigator, select **Company Workspace**, select **Business Process Setup**, and open the [BP].

In the left Navigator, select **Workflow Setup**.

In the **Setup** window, enter information as specified in [Workflow Setup Node](#).
 - Set up project/shell-level workflow BPs from a project/shell tab:
Go to the shell tab, and switch to **Admin** mode.

In the left Navigator, select **Setup**, select **Business Process**, and open the [BP].

In the left Navigator, select **Workflow Setup**.

In the **Setup** window, enter information as specified in the [Workflow Setup Node](#).

Setting Up Non-Workflow BPs with Integrations from Oracle Integration

To use integrations from Oracle Integration in non-workflow BPs at the company or project/shell level:

1. In the left Navigator, select and open a non-workflow BP at the company or project/shell level.
2. Select the **Integration** tab of the non-workflow BP.
3. For a specific **Status** field, select the **Integration Name** that you have configured in step 1 for this non-workflow BP, and click **OK**.
For example, select the **Integration Name, Action Item**, for the **Update** status of the non-workflow BP.
4. Upload the above configured integration settings of the non-workflow BP to shell templates or shells as necessary.

After the connection is established with Oracle Integration, you can temporarily disable or enable the Oracle Integration connection as needed in the **Integration** tab. For more information, see [Disabling Oracle Integration Connection](#).

Creating, Adding, and Deleting Business Process Help Files

Oracle provides standard business processes.

For Cloud

If you must download, deploy, and access a local copy of the business processes help files, download the help.zip. Contact your cloud administrator for more information.

For On-Premises

If you must download, deploy, and access a local copy of the business processes help files, download the help.zip file and follow the instructions in the *Unifier Installation Guide*.

You can also develop your customized business process and create your own help files.

Note

The help files must be in Adobe Acrobat PDF format.

You can add the help file to new or existing business process setups. If you add the help file after individual business process records have been created, the help file will not be available to the existing records; however, it will be available immediately from the business process log or in any new business process that is created after the help file has been added.

Note

Custom business process help files can be added to project-level or company-level BPs.

To create a custom business process help file:

1. Be sure that you have installed on your system Adobe Acrobat or other software application that includes a plug-in allowing the ability to create a PDF file.
2. In Microsoft Word or a similar software application, write the business process instructions that you want to be made available to other business process users. Save the business process help file, but do not close it.
3. With your business process help file still open, do one of the following to create a PDF file. This will depend on how your system is set up.
 - **Print to PDF file:** Select the **File** menu, and choose **Print**. From the Printer drop-down list, select **Adobe PDF** as the printer, and select **OK**. Name the PDF file, and select **OK**.
 - **Save as PDF file:** Select the **File** menu, and choose **Save as PDF**. Name the PDF file, and select **OK**.

The PDF file will be generated and can be viewed using Adobe Acrobat Reader.

To add a custom business process help file to a new or existing business process setup:

1. For a business process:
 - At the company level, go to the **Company Workspace** tab, and switch to **Admin** mode; in the left Navigator, select **Company Workspace**, and then select **Business Process Setup**.
 - In a project or shell, go to the shell tab, and switch to **Admin** mode; in the left Navigator, select **Setup**, and then select **Business Process**.

Note

Even though the help file is added to an individual setup window, it is automatically added to all setups for that business process. The help file will be available immediately to all users with access to the business process log in User mode and will be available to any individual business process record created after adding the help file.

2. Select the business process from the log, and select **Open**. The Setup log for the business process opens.
3. Select **New** to create a setup, or select an existing setup from the log and select **Open**. The Business Process Setup window opens.
4. In the **General** tab, select **Help File Add**. The File Upload window opens.
5. Select **Browse**, and navigate to the help file that you want to add. The help file must be an Adobe Acrobat PDF file. Select **OK** to attach the file and close the File Upload window.
6. When you have completed the Business Process Setup window, select **OK**.

To delete a business process from an existing setup:

Note

You can delete a business process from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Business Process**.
3. Select a business process for deletion.
4. Select **Delete**.
5. When the prompt appears that asks you to confirm deletion, select **Yes** to delete the business process.

To access the business process Help link:

1. In **User** mode, navigate to the business process log.
2. Select the **Help** menu, and then select the business process name, which appears at the bottom of the **Help** menu. If a business process help file has been added to the business process form setup, the PDF file will open.
3. You can also access the file from the business process form. Open a business process record, select the **Help** menu, and select the business process name.

Auto-creating BP Record or Planning Item Based on Conditions or Frequency

Using uDesigner, users can design a form that automatically creates a business process (BP), line item, or planning item from a source form to a destination (auto-created) form after certain criteria are met. Users who have modify ownership permissions in the source record can

enable auto-creation. You can override conditional auto-creation and immediately invoke the auto-creation manually if needed.

This type of auto-creation automatically generates a new record based on:

- A condition, such as a dollar amount
- A frequency, such as a daily or weekly time frame

 Note

Line items cannot be created with a frequency trigger.

- Both a condition and a frequency

When a BP or line item reaches the trigger(s), the form will automatically create a new record or line item. This type of auto-creation uses a BP Creator, Planning Item Creator, or BP Line Item Creator data element on the upper or detail form to generate the new BP(s), line items, or planning item(s).

You can use auto-created BPs to manage repeated events, such as:

- **Line items of lease BP generating payment request BP records:** A lease BP with a pregenerated payment schedule can use this functionality to generate payment request records at appropriate preset days in advance of the payment due date to be routed for approvals.
- **Preventive maintenance BP line items generating work orders BP records:** A preventive maintenance type BP (Preventive Maintenance Book) can be set up to create work orders for assets at periodic intervals depending on the service needs of the asset. For example, if you wanted to use auto-creation to create a work order BP to order maintenance on a vehicle, you would first create a preventative maintenance BP (the source BP) and have your administrator set up the auto-creation of a work order for vehicle maintenance BP (the destination BP) to order the work on the vehicle.

In this example, the uDesigner user set up which BP is the source BP and which is the destination BP. The company administrator specifies the conditions and defaults for the auto-creation. End users can set up the periodic auto-creation, based on their needs.

In the Preventive Maintenance Book, for:

Floating Line Items holding non-terminal work orders, you cannot edit the following DEs:

- Family Identifier
- Line Item Status
- Schedule Type

Fixed Line Items holding non-terminal work orders, you can edit the following DE:

- Line Item Status

- **Create action items from meeting minutes:** Create and assign tasks to different people creating a fully automated flow for routing of action items from meeting minutes.
- **Create a planning item:** Create a planning item when an initiative BP has been approved. The planning item could then be fleshed out with details, such as budgets, locations, personnel.
- **Add a new line item to an existing record:** You can add a line item to an existing BP. For example, a submittal registry record could contain line items that auto-create separate submittal BP forms for each contractor on a project. In the course of work, you might

realize that the original submittal registry record is missing a submittal for an architectural drawing. You could submit a new submittal BP form that would add the missing architectural drawing submittal to the original registry record.

For Line Item Creation:

- Users cannot create a line item on a record that is at a terminal or terminated status.
- For line items created on a non-workflow cost type BP, the cost amount(s) will roll up to the Cost Sheet.
- For line items created on workflow cost type BP, the cost amount(s) will *not* roll up to the Cost Sheet.

Note

When line items are created in a BP record via a Line Item Creator, the End step of the BP is used to evaluate data element (DE) formulas that can be applied to calculate the sum of line items, regardless of the workflow step of the BP. For example, a Budget Adjustment BP contains a line item creator that creates one or more line items within a Budget Approval BP record. The Budget Approval BP contains an upper form DE (Budget Adjustments) that sums the Budget Adjustment line items. A Budget Approval BP record is in a workflow step, and on its step Action form, the Budget Adjustments DE contains the formula that calculates the sum of the line items. The End step form of the BP must have the same formula calculation to sum the line items applied to the DE to ensure that the Budget Adjustments DE value reflects the line item creation.

After a new **workflow** record is created, the system sends it to the assignees as an **initiation task (I Step)** that appears on the user's Tasks log and the BP log to which the record belongs. If a new record is sent as an initiation task, the user must accept the task to manually launch the record.

Note

Regardless of the number of assignees or creators, only one user may accept the I-Step task.

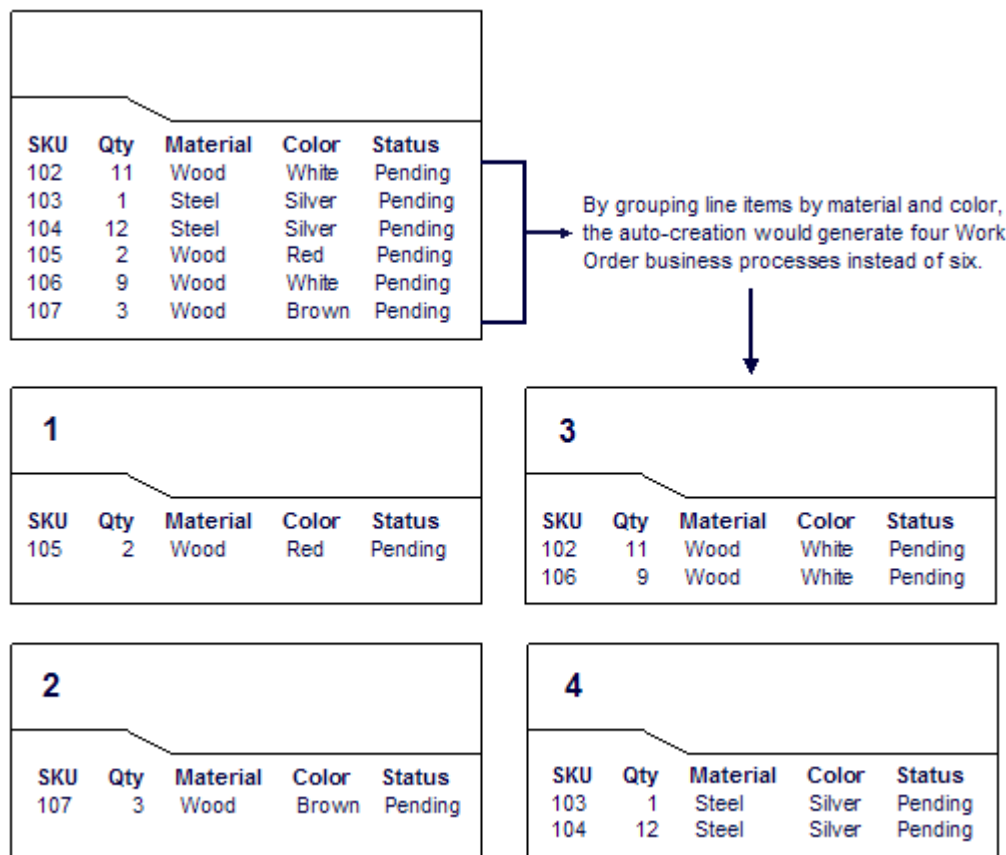
After a new **non-workflow** record is created, the system sends it to the designated creators as an **initiation task (I Step)** that appears on the user's Tasks log and the BP log to which the record belongs. The user must accept the task to view the record.

Grouping line items into single records

The system auto-creates new business process records using a BP Creator element. If this element is on the upper form of the business process, it will auto-create a single record. If the BP Creator element is on the detail or line item form, it will auto-create a record for every line item on the source record. For example, if source tab A has a BP Creator element and 10 line items, and source tab B has the same BP Creator element and 7 line items, 17 new records will be auto-created.

Sometimes, however, creating a record for every line item is cumbersome. You can end up with 17 records that differ in only one aspect, such as a color. For cases like this, you can group line items for auto-creation to create fewer generated records. In a simple example for a

lumber yard order, you might have doors made of wood or steel, both in colors of white and red. You could group the line items according to the material (wood or steel) and color (red or white) to create fewer work order records.



Note

- If the auto-created business process is set up to include line item attachments, the attachments will be appended to the upper form of the destination business process if it is not a line item type.
- If the auto-creation uses a date trigger, the system will ignore this grouping feature.
- The system will not group line items if:
 - The steps in the workflow are of different duration
 - The task assignees are different
 - The locations (such as shells) are different

See also [Set up auto-creation for a non-workflow BP or planning item](#) and [Set Up Auto-creation for a Workflow BP](#).

Bypassing the I Step

During the business process setup, you can set up an auto-created workflow BP to skip the **Initiation** step and send the record directly into the workflow, where it normally arrives at the first step after the **Create** step (or the first step in a conditional routing). For a workflow BP,

you can specify the schema, the step in the workflow that the record should use as its first step, the workflow duration, and the name of the person or group who will be the owner of the auto-created record. When the record is created, data will roll up to the manager sheets at the appropriate status; however, if the system encounters errors or invalid data, the record will remain at the Create step, and roll-ups will not occur until the user resolves the errors.

For a non-workflow BP, you can set up an auto-created record to skip the Initiation step. In this case, the non-workflow BP will be created and will appear in the BP log in either an "edit" or "finish edit" mode. If it appears in an "edit" mode, the user will have to open the record and add or correct information on the form. If it appears in a "finish edit" mode, the record is considered complete, and data will roll up to manager sheets.

Auto-Creation Protocol for Bypassing the I Step

Auto-creation uses details specified in the BP Creator element to create the record. If these details are not present in the BP Creator element, the auto-creation feature will use the following protocol to attempt to create the record.

For a Non-Workflow BP	For a Workflow BP
<i>Checks for owner specification:</i> Checks the source BP setup Checks the destination BP setup If no owner can be identified, sends an error notification to those specified in source BP	<i>Checks for owner specification:</i> Checks the source BP setup Checks the destination BP setup If no owner can be identified, sends an error notification to those specified in source BP.
<i>Checks for status:</i> Checks the destination BP setup If no status found, creates the record and puts it into "edit" mode for user to correct.	<i>Checks for a workflow schema:</i> Checks the destination BP setup If no schema is specified, the record will be sent as an I Step to the user's Tasks log and the BP log to which the record belongs. The user must accept the task to manually launch the record.
	<i>Checks for an action specification</i> Checks the destination BP setup If no action is specified, the record will be sent as an I Step to the user's Tasks log and the BP log to which the record belongs. The user must accept the task to manually launch the record.

Rules for Checking Conditions for Auto-Creation

There are rules that govern when the Unifier scheduler checks the conditions for auto-creation, and then if these conditions are met, it auto-creates the BP.

Rule 1

The Company Administrator selected the Enable Auto creation checkbox for BP Creator when the auto-creation was set up.

If the Enable Auto creation checkbox is selected, it implies system-based auto-creation, and the BP Creator Select button is not displayed in User mode.

For non-workflow BPs: The condition check occurs on **Submit**. If condition met, creates record and shows the link for the auto-created BP. If no condition is specified auto-creates records and shows the link for the auto-created BP.

For workflow BPs: The condition check occurs on **Send**. If end step reached and Action Form is used on End Step, the condition check occurs on **Save** instead of **Send**. If condition met, creates record and shows the link for the auto-created BP. If no condition specified blindly creates records and shows the link for the auto-created BP.

If the Enable Auto creation checkbox is not selected, it implies manual creation.

For non-workflow BPs: The condition check does not occur on **Submit**.

For workflow BPs: The condition check does not occur on **Send**.

BP Creator - Select button shown in User mode so that the user can create the business process manually. If selected, creates BP record without checking any condition, and creates record and shows the link.

Rule 2

Date Trigger Condition check: Are checks on the specified Date Data Element. For workflow or non-workflow BPs, this setup implies that the condition checks are done on a date instead of Finish Edit/Send, if a link does not exist next to BP creator element. If a link exists, it will not create any new records for that BP Creator element in the chosen line item of the record.

Rule 3

Trigger Condition check based on frequency (Periodic): Are checks on frequency for BP Creator elements with Enable Auto creator checked. If specified, these are the only time condition checks are done. This overrides any other checks for date. This is the only method to create multiple records even if a link exists and a record has already been created for this BP Creator element. The link created using this will always point to last auto-created record.

Setting Up Auto-Creation of Cash Flow Curves from Contracts

An additional cash flow option is available on the setup window for CBS code-based base commit business processes. This option enables the automatic creation of a commitment cash flow curve for each base commit record in a project/shell. To do this, you simply designate a commitment-level cash flow template to use for the auto-created curve.

For workflow business processes, this option is available in the Workflow Setup window Settings tab for every step other than the Create step. At runtime, when the record is sent from that step, the cash flow curve auto-creation is triggered and the curve is created in the Cash Flow log for the project/shell.

Note

The permissions will get copied over to the created Cash Flow.

For non-workflow business processes, this option is available in the Business Process Setup window on the General tab. At runtime, the cash flow curve auto-creation will be triggered when Finish Edit is selected on the BP record.

When copying a cash flow to create a new one, all permissions will be copied to the new cash flow curve.

The following procedures describe enabling the auto-create cash flow option. For more information on setting up BPs, see [Setting Up Non-Workflow Business Processes](#) and [Setting Up Workflow Business Processes](#).

Note

- This option is available for base commit business processes only; that is, cost-type business processes with sub-type of "Line Items with CBS Code" and classification of "Base Commit." For all other types of business processes, this option will not display. The cash flow curves that are auto-created are based on commitment detail level curve templates (either company-level or curves created in project/shell templates).
- Because your organization might have multiple cash flow jobs and automatic snapshots scheduled to run for a multitude of projects, you can use the Cash Flow Jobs functional node to manage the jobs and auto-snapshots and their impact on system performance. For more information, see the *Unifier General Administration Guide*.

To enable auto-creation of commitment-level cash flow curves in non-workflow base commit BP records:

1. Navigate to the **Business Process Setup** window for the base commit business process.
 - a. Go the project/shell tab (or project/shell template) and switch to **Admin** mode.
 - b. In the left Navigator, select **Setup**, and then select **Business Process**. Double-click the base commit business process from the log.
 - c. Double-click the business process again to open the Business Process Setup window.
2. On the **General** tab, locate the Cash Flow Template field.
3. Select **Add**. The Cash Flow Templates window opens. It lists all commitment detail-level cash flow templates created in the **Company Workspace** tab (which are available by using the left Navigator to go to **Standards & Libraries**, selecting **Cash Flow**, and then selecting **Templates**) or in project/shell templates (in the Cash Flow node).
4. Choose a template, and click **Select**.

Note

Entering a template in this field enables the cash flow auto-create feature. To disable this feature, select Remove to remove the cash flow template from the field.

5. Select **OK** to save and exit the Business Process Setup window.

At runtime, a commitment cash flow curve will be created in the project/shell when the base commit record is complete—that is, the user selects Finish Editing on the record. The data used for the cash flow curve will be taken from the line item values on the record at the time the record is sent.

To enable auto-creation of commitment-level cash flow curves in workflow base commit BP records:

1. Navigate to the Business Process Setup window for the base commit business process.
 - a. Go the project/shell tab (or project/shell template) and switch to **Admin** mode.
 - b. In the left Navigator, select **Setup**, and then select **Business Process**. Double-click the base commit business process from the log.
 - c. Select **Workflow Setup**, and double-click a setup name (or create a new BP setup) to open the Workflow Setup window.
2. Select the **Settings** tab.
3. Select any step other than the Create step. Scroll down the Step Configuration options and locate the Cash Flow: Default Template field.
4. Select **Add**. The Cash Flow Templates window opens. It lists all commitment detail-level cash flow templates created in the **Company Workspace** tab (which are available by using the left Navigator to go to **Standards & Libraries**, selecting **Cash Flow**, and then selecting **Templates**) or in project/shell templates (in the Cash Flow node).
5. Choose a template, and click **Select**.

Note

Entering a template in this field enables the cash flow auto-create feature. To disable this feature, select Remove to remove the cash flow template from the field.

6. Select **OK** to save and exit the Workflow Setup window.

At runtime, a commitment cash flow curve will be created in the project/shell when the base commit record is sent from the selected step. The data used for the cash flow curve will be taken from the line item values on the record at the time the record is sent. If record line item values are edited during the course of the workflow, the curve values will update the next time the curve is refreshed.

Note

This option is not available in the Create step. If you designate a cash flow template in more than one workflow step, the cash flow curve will be created at the first step in which this option is enabled; the auto-creation will be ignored in any subsequent steps, because only one cash flow curve can be created per base commit record.

Setting Up a Blanket Purchase Order Summary Template

If you have set up a company-level blanket purchase order (a uDesigner created, company-level cost subtype commit BP), you must then set up a summary template to enable validation against individual commit BPs that reference the blanket PO.

To set up the summary template for a blanket PO:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Business Process Setup**. The business process log opens.
3. In the log, double-click the name of the blanket PO business process. A setup log opens.

4. On the log, select the business process, and select **Summary Template**.
5. You may add additional columns as needed. Select **Columns**, and then select **New**. Complete the Column Properties. The data source choices for columns include:
 - **Single source:** All active cost BPs for your company (and their statuses), regardless of project. You determine which statuses you want to appear on the sheet. If you import and set up cost BPs that might reference the blanket PO, be sure to add them to the summary sheet template to track them against the total.
 - **Logical source:** Total commits and remaining balance. These should be set up as formulas, where total commits is the sum of the commits that you added as columns, and the remaining balance is the difference between the original amount and total commits.

To enable validation, include a total commits column to keep track of commit BPs that reference the blanket PO, and a remaining balance column to ensure that you do not exceed the original amount.

Setting Up a Base Commit Business Process

A Base Commit classification of a Cost Type Business Process (BP) can create a schedule of values; a General Spends classification can create an invoice at the CBS level.

Use the Base Commit BP for:

- For monies committed to be spent; for example, a contract or purchase order.
- For creating a Schedule of Values (SOV) sheet for a General Spends, Payment Applications, or Summary Payment Applications.

Note

- In Standard Cost Manager, the Base Commit BP creates an SOV sheet.
- If you configure specific Data Elements (DEs) to auto-populate from a Base Commit BP, do *not* configure the same auto-population using CSV, Microsoft Excel, or REST API in an SOV sheet for General Spends, Payment Applications, or Summary Payment Applications.

With the Base Commit type of BP, you can:

- Reference against a company-level commit BP
- Enforce the line items against a company-level commit amount
- Create a commitment summary when the BP is in a terminal status
- Consolidate line items

From this type of BP, you can:

- Select only a General Spends type of commitment summary
- View commitment summary line items only by individual line items, or grouped by commit codes

To set up the for a Base Commit BP:

1. Go to the shell tab, and switch to **Admin** mode.

2. In the left Navigator, select **Setup**, and then select **Business Process** to open the **Business Process - Current View** log.
3. Open the BP that you want to set up.
4. In the **Business Process Setup** window, **General** tab, enter values.
5. Continue on with entering values in the **Settings**, **Notification**, **Auto Creation**, and **Record Copy** tabs.
6. When finished, select **Apply** and **OK**.

Removing Restrictions Related to the Multiple Payment Application Submissions (Remove SOV restrictions)

When you create a Workflow BP record, the BP record shall remain in progress (in-flight) until the record reaches its terminal stage.

You can set up a Base Commit type of BP that is based on an existing Schedule of Value (SOV), and in progress (in-flight), to accommodate:

- Multiple Payment Application records can be created for the same commit record.
- Multiple Negative Change Orders can also be created for a given Base Commit.
- Payment application when a *negative change order* is in-flight.
A *negative change order* refers to a Change Commit (change order) that has been issued to deduct the original committed contract amount. This means that a user has created a record of Change Commit BP type with negative line item amounts.

In the **Business Process Setup** window, **General** tab, you have the option of applying or removing restrictions on multiple payment applications or multiple negative Change Commit in the Base Commit BP. This enables users to create:

- Create and submit a Payment Application when another Payment Application is in progress.
- Create and submit a Payment Application when a Change Commit (change order), with a negative line item, is in progress.
- Create and submit a Change Commit (change order), with a negative line item, when a Payment Application is in progress.
- Create and submit a Change Commit (change order), with a negative line item, when another Change Commit (change order), with a negative line item, is in progress.

In the **Business Process Setup** window, **General** tab, you have the option of applying or removing restrictions on multiple payment applications or multiple negative Change Commit in the Base Commit BP. This enables users to create:

- Create and submit a Payment Application when another Payment Application is in progress.
- Create and submit a Payment Application when a Change Commit (change order), with a negative line item, is in progress.
- Create and submit a Change Commit (change order), with a negative line item, when a Payment Application is in progress.
- Create and submit a Change Commit (change order), with a negative line item, when another Change Commit (change order), with a negative line item, is in progress.

Note

The options listed above are available for Base commits of SOV type = Payment Applications or Summary Payment Applications.

Additional information about Removing SOV restrictions

Users can modify the **Remove SOV restrictions** option at any time except when all the Payment Applications and Negative Change Orders that refer to the BP have reached the terminal step.

When you select or clear the **Remove SOV restrictions** option in an existing Workflow template that you plan to use for updating existing Workflow schema in the destination project/shell, the selected SOV restriction option (existing in the BP setup level) will get updated in the Project/Shell instance.

When you select or clear the **Remove SOV restrictions** option in an existing Workflow template that you plan to use to create Workflow schema in the destination Project/Shell, the selected SOV restriction option (existing in the BP setup level) will not get updated in the Project/Shell instance.

When you select or clear the **Remove SOV restrictions** option in an existing Workflow template that you plan to use to create Workflow schema in the destination Project/Shell, and if this new Workflow schema are used in the Auto Creation tab of the BP setup, the selected SOV restriction option (existing in the BP setup level) will get updated in the Project/Shell instance.

When the SOV restriction option setup is ready and you include the BP in the Configuration Package, if there are any in progress (in-flight) records for the Payment Application, or Change Commit (change order), the import will be successful but the system does not update the setup information for that BP.

If the user does not select the **Remove SOV restrictions** option:

- Multiple payments cannot be created.
- Multiple negative Change Commits cannot be created.
- Positive Change Commit will not affect the in transit payment and Merge message will not be shown.

If the user selects the **Remove SOV restrictions** option:

- Multiple payments can be created.
- Multiple negative Change Commits can be created.
- Merge message is shown only when another payment or Change Commit is created, while the first payment is in-flight.
- Positive Change Commit impacts the SOV Sheet and not the multiple payments. To support multiple payments, merge needs to occur.

Setting Up a Multiple Base Commit BPs Manually with Multiple Payment Applications and SOVs

Construction projects typically have multiple contracts or commitments spread over a time-period. To accommodate multiple contract types or commitments in a project, you can now include more than one Base Commit BP wherein each Base Commit can be associated with a payment application and a distinct schedule of values (SOV).

Note

With this setup, you are no longer limited to configuring only one Base Commit BP with a payment application and SOV in a project.

Prerequisite

You have created one or more Base Commit BPs with Payment Applications and corresponding SOVs.

Procedure

To manually set up multiple Base Commit BPs with payment applications and corresponding SOVs for a project:

1. In the **Location** bar, select your project, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Business Process**.
3. In the **Business Process Setup - Current View** log, select **New**.
4. In the **New Business Processes** window, select a Base Commit BP with payment applications.
5. Select **OK** to include the Base Commit BP in the **Business Process Setup - Current View** log.
6. Repeat the above step sequence to add multiple Base Commit BPs.
7. Select **OK** to confirm the alert message that displays when you add subsequent Base Commit BPs.

With this setup, the **Schedule of Values** log is relocated in the left Navigator. Contact your Company Administrator if you do not have access to the new SOV log location.

Alternative Setup Methods

You can also set up multiple Base Commit BPs by updating shell templates. For more information, see [Setting Up Shell Templates with Multiple Base Commit BPs with Multiple Payment Applications and SOVs](#).

Setting Up a Request for Bid (RFB) Business Process

A Request for Bid (RFB) business process allows companies to invite bids from multiple vendors. The Request for Bid process requires the following components to operate in Unifier:

- **Master Vendor BP (Vendor Master BP):** A simple or Line Item type BP (Company level) that lists the available vendors who can be invited to bid. A company can have only one master vendor BP. The system allows your company to only designate one Vendors business process as the RFB master vendor list.
- **Requestor form:** This is the BP form the user uses to distribute bid requests from vendors.
- **Bidder form:** This is the BP form the vendors use to submit their bids.
- A **workflow** for the requestor form: This workflow or workflows can be used to approve the RFB before inviting bids, to distribute the RFB, and to approve the final bid award.
- (Optional) A **bid comparison sheet:** This is a sheet designed specifically for your company for the purpose of comparing the bids you receive from vendors. (If your company has not designed one, the system provides a default sheet you can use.)

Verify the RFB Has Been Designed Correctly

In uDesigner:

1. Verify that the correct vendor list is linked to the RFB.
 - a. Open your vendor master (Master Vendor BP/Vendor Master BP) business process properties, and select the **Options** tab.
 - b. Make sure the field **Use this process as RFB master vendor list** is checked. This option links the vendor list to your RFB.
2. Make sure the correct vendor list has been specified as the RFB's reference process.
 - a. Open the RFB, and select **Reference Processes** in the left Navigator.
 - b. Verify that the RFB references the correct vendor BP.

In uDesigner, for the RFB business process (BP), you can select a BP Data Picker that references a Line Item type BP that can be used to filter the available bidders in the Option tab.

The BP Data Picker that is available for selection is the one that has been added to the Requestor Upper Forms.

The selected BP Data Picker points to the Line Item type BP that contains the BP Data Picker (BP Picker) that is in the Detail Form and subsequently points to the Master Vendor BP/Vendor Master BP, at the Company level.

The following explains the workflow:

- In the RFB BP, the Options tab enables you to set the data picker required to connect to the Line Item type BP.
- The Requestor BP form contains the data picker that points to the Line Item type BP.
- In the Line Item type BP, the Details Line Item record contains the BP Data Picker/BP Picker that is required to connect to the Vendor BP.
- The Data Picker/BP Picker points to a Master Vendor BP/Vendor Master BP record at the Company level. You can use the query condition, on the data picker, to filter the list of vendors (for example: within the same project or before certain dates).
- The Vendor BP contains the list of vendors who are available for bidding.

Set Up a Bid Management Account

To enable the vendors to sign in and submit bids, you must create a "bidder" account. In the preferences you set up for this account, you must specify certain settings to make the bidding process possible. You will enter this bidder's account in your company's preferences.

Note

Do not link the bid management account to an actual user in your company. Create this account strictly for the bidding process so that you can set up the account preferences specifically for bidding. If you set up a special "bid management" user account, you can prevent users from inadvertently changing the settings.

1. To set up this "bidder" account, add the bidder as a user.
For more information, see *User Administration*.
2. Sign in as the user with the bidder account.
3. In the upper-right corner of your window, select your **User Name** to open a contextual menu.
4. Select the **Preferences** link. The User Preferences window opens.
5. Select the **Options** tab.
6. Set the **Time Zone** field to match that of the bid requestor's (either your company's time zone, or the zone from which the bid invitation is sent).
If your bidders are in a different time zone from yours, this will protect them from mistakenly submitting bids after the bidding process is closed.

Controlling the Display of Information

On the RFB Bidder Portal, the bidder can see the Requestor Package with the Estimated Unit Cost, and the Amount.

As a requestor, there are occasions that you want to ensure that:

- Bidders do not see bids offered by other bidders.
- Bidders do not see the cost-related or estimate-related information on the requestor's form.

As a result, the system allows you to hide values of the requestor's detail form fields from bidder. Refer to the *Unifier uDesigner User Guide* to learn which options to select.

Set Up the RFB

To set up the RFB (in **Admin** mode):

1. Follow the standard procedures to import ([Importing Business Processes](#)), configure ([Configuring Business Processes](#)), and set up (see [General Procedures for Setting Up Business Processes](#)) the RFB.
2. Define a link for the bidders to use to submit bids:
 - a. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 - b. In the left Navigator, select **Company Settings**.
 - c. Select **Edit**.
 - d. On the **General** tab, in the **Bid Management** section, enter the account name of the user who will be managing the bids that your company receives.

This is the account that contains the bidder's preferences you created using the instructions under [Set Up a Bid Management Account](#).

Business Process Permission Settings

Refer to the *Unifier Data Reference Guide* for permission settings.

Business Process Functionality

Not all BPs work with all functional areas of Unifier. This table lists the available BPs and the areas in which the BP works.

Type	Subtype	Classification	Shell (CBS)	Shell (Generic)	Company
Cost	Commit at Company level	-			X
Cost	Line item with CBS code	Generic	X		
Cost	Line item with CBS code	Transfer	X		
Cost	Line item with CBS code	Base Commit	X		
Cost	Line item with CBS code	Change Commit	X		
Cost	Line item with CBS code	General Spends	X		
Cost	Line item with CBS code	Payment Applications	X		
Cost	Line item with fund code	Generic	X		
Cost	Line item with fund code	Transfer	X		
Cost	Line item with both fund and CBS code	Generic	X		
Cost	Line item with both fund and CBS code	Transfer	X		
Cost	Line item with company account code	Generic			X
Cost	Line item with company account code	Transfer			X
Cost	Line item with asset code	-			X
Cost	Line item with multiple codes	Generic		X	
Cost	Line item with multiple codes	Transfer		X	
Cost	Line item with multiple codes	Base Commit		X	

Type	Subtype	Classification	Shell (CBS)	Shell (Generic)	Company
Cost	Line item with multiple codes	Change Commit		X	
Cost	Line item with multiple codes	General Spends		X	
Cost	Line item with multiple codes	Lease		X	
Line item	-	-			X
Line item	-	-	X	X	
RFB	-	-			
Simple	-	-			X
Simple	-	-	X	X	
Document	With folder structure	No detail form	X	X	X
Document	With folder structure	With detail form	X	X	X
Document	Without folder structure	No detail form	X	X	X
Document	Without folder structure	With detail form	X	X	X
Text	-	-	X	X	X
Resource	Resource booking	-			
Resource	Timesheets	-			X

Query-Based Tab in Business Processes

The Query tab allows access to all Business Processes/Space/Level records, related to a Business Process, by way of Query-based Tab (QBT).

Example

To see all approved Spaces related to your BP, use the QBT to query/fetch those records. After a Query-based Tab (QBT) is successfully created and deployed using uDesigner, the Query Tabs appear in the required BP, in User mode.

A Query-based tab (QBT) is a mini business process log that displays a filtered list of business process records in the tab line item list. The QBT can be used in all:

- Line Item business processes
- Cost business processes
- Space business processes
- Document-type business processes

Example

A contract QBT can display just the change orders issued against the contract. Another QBT can display only invoices against the contract. Records displayed in the QBT line item list are from the same level (project/shell or company.)

QBTs are not supported in the following business processes:

- Simple
- Resource
- Text
- Request for Bid (RFB)
- Project/Shell creation

In uDesigner, the "**Query Items**" is a new parent node in the Business Processes (left Navigator) with two sub-nodes:

- **Query Tabs**
To define the QBTs that will be added to the business process. Query tabs can be created if the maximum number of tabs (fifteen) has not been reached.
- **Summary Elements**
To define summary data elements to be added to the **Upper Form** of the business process. The summary elements specify the type of summary information (average/count/total/maximum/minimum) that will be shown from the selected query tab, for example, the total amount of records in the tab.

As a pre-process to defining the Query tab in the business process, you need to use a reference picker in one of the upper forms of the business process, Space, or Level from where you want to create the Query tab. For defining a Query tab, select the **Query Tabs** link in uDesigner, select **New**, and select a business process, Space, or Level. The system allows you to create a maximum of fifteen tabs in uDesigner, including the QBT.

Query-based tab enables the user to:

- View a filtered list of business process records associated with the parent business process.
After the QBT in a business process is correctly configured and deployed, the QBT appears in the business process (**User** mode) for which the QBT has been configured.
- Create a new business process from the QBT in the same Project/Shell, where the parent business process resides.
Users can create business process records from the QBT provided that the users have permission to create business process records for the Project/Shell that contains the business process.
- Copy a business process in the same location as the parent business process.
Users can copy a business process either with or without attachments. In addition, a user can copy any of the records, in the QBT, and create a new business process record.

Note

Users can copy one record at a time.

When the user copies a business process record to create a new business process, the new business process record contains all the information present in the copied/based business process record.. So, in case of business records with attachments, the user has the option of including or excluding (copying or not copying) the attachments when copying a business process record.

- Search for business process records based on user-entered criteria.
Users can find any record from the list of records included in the QBT.

Note

The fields available for the Find feature must be defined in the uDesigner for the business process.

Use the **Properties** option (log toolbar) to configure the tab. The options are:

- Line Items
 - Standard
 - Gauges & Meters
 - Hide current tab

User-Defined Report (UDR) and Query-Based Tab

Users will be able to use the **Summary Elements**, from any of the QBTs, in any of the UDRs that the user wants to use if the UDR is based on the same business process record.

Note

If a Query tab is configured using a query condition, the same query condition has to be implemented within the UDR. For example, if a query-based tab (QBT) has a condition, Status = Approved, then create a corresponding query condition in the UDR as: BP A/QBT BP B/Status = Approved.

Query Tab and Document-type Business Process

The Document-type business processes support QBTs and Line Item tabs along with the existing standard tab.

To define the Query tab in a Document-type business process, you must add a reference picker in the Upper Form of the business process that you want to run the query against. This includes business process picker, new data definition, or business process picker for the destination business process.

When users select the **Properties** option, for an **Upper Form** on a Document-type business process, the **Options** tab displays the following:

- Standard Tab (for Document-type business process)
- Line Item Tab (similar options across each line item type tab)
- Query Based Tab (similar options across each QBTs)

Standard Tab (for Document-type business process)

- Hide current tab
- Add/Copy Line Items
- Remove Line Items
- Allow Modification of Line Item, except when status is
- Allow Line Item Status to be modified
- Add Attachments
- Remove Attachments

- Append Line Item Folder Structure to Auto Publish Path
- Make Attachment to a Line Item mandatory
- Allow comments
- Allow marking of comments as 'Final'
- Additional
 - Allow linking Mailbox
- Attachment Source
 - Unifier Folders
 - My Computer

Line Item Tab (similar options across each line item type tab)

- Hide current tab
- Add/Copy Line Items
- Remove Line Items
- Allow Attachments to the line item
- Allow Modification of Line Item, except when status is
- Allow Line Item Status to be modified
- Additional
 - Allow linking Mailbox
- Attachment Source
 - Unifier Folders
 - My Computer

Query Based Tab (similar options across each QBTs)

- Hide Tab
- Additional
 - Allow linking Mailbox
- Attachment Source
 - Unifier Folders
 - My Computer

To view, or use, a QBT:

1. Go to the parent business process log in Project/Shell.
2. Open a record to view the QBT.

Note

The source business process of the QBT must be active for the tab to display.

See the following topics for more information about creating QBTs.

Creating Query-Based Tab in Business Processes

To create a Query tab:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
 3. Select and open a business process (BP).
 4. In the left Navigator for the BP, select **Query Items**, and then select **Query Tabs**.
 5. In the **Query Tabs** log, select **New**.
 6. In the **Select Business Process** window, select the drop-down list (under Select Business Process/ Attribute field), select a business process or attribute, and select **OK** to open the **Query Tab** window.
 7. In the **Query Tab** window, enter values in the **Name**, **Description**, and **Reference Picker** fields (this is to filter records in the Query tab).
The value for the **Reference Picker** field is auto-populated when a user creates a new business process record based on a QBT. In such a case, the record number of the parent record will be auto-populated and the user can edit the number and change it to a desired record number. After the business process record is successfully created, the reference graph shows the intended business process record.
 8. When finished, select **OK**.
 9. In the left Navigator, select **Item Logs** to begin designing the log. You can have a total of 8 (eight) tabs, including the Query tabs.
The log for the **Items Log** has several columns. The **Type** column enables you to distinguish between the Detail Form line items list and the Query Items. The **Tab Name** column appears before the **Name** column. Define query conditions in the setup for filtering the list of records returned at runtime.
-  **Note**
- You can sort Item Logs using the Name, Last Saved, or Type column. You cannot sort the log using the Tab Name, Tab Order, or System Defined column.
10. Select to open the **Query items** window, and select the **Query** tab to begin setting your condition.
 11. Select **Add** to open the **Query Condition** window. If you do not add a query, the tab returns all the records, based on the reference process.
 12. Select and enter values in the **Data Element** and **Condition** fields. You can add multiple conditions. the system performs the query with "And" operand, on the conditions.
 13. In the left Navigator, go to the **Upper Forms** node to configure the Query tab options, similar to the **Detail Forms**.
 14. Complete your business process.
 15. Deploy the business process form.

Note

When setting two BPs that are dependent on each other with a Query Based Tab (QBT), ensure that you do not assign a Summary DE (Data Element) to both BPs.

Additional information:

Within a selected BP, the **Query Items** sub-node provides the following two links:

- **Query Tabs**
- **Summary Elements**

Query Tabs

You can use the **Query Tabs** sub-node to define and maintain the various Query tabs that are defined within the business process.

General Tab

In the **General** tab, you can enter the name, description, and reference picker for the required QBT.

In case, you have already included the reference picker in the Upper Form of the business process, the reference picker appears in the drop-down list of the **Reference Picker** field. In this case, the **Name** field is populated with the name of the business process, but you can change the name of the QBT, if necessary. The name and reference pickers are required fields on the **General** Tab, so you cannot create a QBT if you have not included the reference picker on the Upper Form of the business process.

Query Tab

The **Query** Tab of the QBT is used to create a query to filter the results, displayed within the QBT, based on any particular condition.

To access the Query Tab, go to **Item Logs** sub-node, open the QBT that was created, and switch to the **Query** tab.

Note

It is not required to have a query. If no queries are defined, all records display in the QBT, in User mode.

You can define multiple queries within the Query tab.

The Query Tabs log allows you to:

- See all the Query Tabs
- Create a new QBT (New).
- Open an existing QBT to review or change content (Open).
- Delete an existing QBT (Delete).

Summary Elements

You can use the summary elements on the Upper Form of the business process to show the data that is being exchanged. You can use the following types of the summary elements in QBT:

- Average
- Count
- Total
- Maximum
- Minimum

You can define multiple summary elements. To create summary elements:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, and then select **Business Processes**.
3. Go to your business process, select the **Summary Elements** node, and use the QBT to create your summary elements. After defining the summary elements, select **OK** to save.

The log for the **Summary Elements** node allows you to:

- See all the Summary Elements.
- Create a new Summary Element (New).
- Open an existing Summary Element to review or change content (Open).
- Delete an existing Summary Element (Delete).

After you create the summary elements, you can include them in the Upper Form of your business process.

Setting Up Updates for Business Process Records

Business Processes (BPs) can be associated with a specific project/shell (Project/Shell-level BP), or they can be applicable for the entire Company (company-level BP) and not be specific to a Project/Shell. The Administrator (Project/Shell or Company) determines which forms are to be used and how the workflows operate.

To set up a BP record to receive updates in a Company or Project/Shell, do one of the following:

- For a **Company**:
 1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **Company Workspace**, and then select **Business Process Updates**.
- For a **Project or Shell**:
 1. Go to the shell tab, and switch to **Admin** mode.
 2. In the left Navigator, select **Setup**, and then select **Business Process Updates**.

Company Workspace and Business Process Updates

To update a Business Process (BP) in the Company Workspace:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Business Process Updates**.

Business Process Updates Log in Company Workspace

The Business Process Updates log in **Company Workspace** allows you to set up updates from a template to a record, at the Company level. The log consists of the following:

Menu

- File
- Edit
- View
- Help

Toolbar

- New
- Open
- Find

- Cancel Request
- View Details

Note

These options can be accessed through the Business Process Updates log menu options.

Columns

- Name
- Source Business Process
- Source Business Process Record
- Submit Date
- Schedule date
- Start Date
- Completion Date
- Status
- Requested By

The functions of the elements in the Business Process Updates log are explained in the following section.

Company Workspace and Preventive Maintenance Type BP

Preventive Maintenance Business Process (BP) Line Items generate Work Order BP records. You can set up a Preventive Maintenance type BP (Preventive Maintenance Book) to create Work Order BP records for assets at periodic intervals according to the service needs of the asset.

In the Preventive Maintenance Book, for:

- Floating Line Items holding non-terminal work orders, you cannot edit the following DEs:
 - Family Identifier
 - Line Item Status
 - Schedule Type
- Fixed Line Items holding non-terminal work orders, you can edit the following DE:
 - Line Item Status

The Work Order BP records refer to a Preventive Maintenance type BP (Preventive Maintenance Book) to view all the Work Order BP records for that Preventive Maintenance type BP (Preventive Maintenance Book).

The Business Process Updates log in Company Workspace allows you to set up updates from a PM Book Template to a PM Book record, at the Company level.

The following explains the following toolbar options:

Note

These options can be accessed through the Business Process Updates log menu options.

- **New**
- **Open**
- **Find**
- **Cancel Request**
- **View Details**

The **New** option enables you to create update requests from the PM Book Template type, and the log displays all the PM Book Template updates that exist at the Company level.

The drop-down list of the **New** option lists all the BPs of PM Book Template type that have been set up in the Company Workspace. If a BP is not Active, or it does not have Active setups, the system does not include the BP in this list.

Note

If there are no BPs that have Active setups, the **New** option will be disabled.

When you select a BP from the New option list, the BP record selection window opens which enables you to select the source PM Book Template record for the update.

The BP record selection window contains the log elements/options that have been set in the Business Process Configuration.

The toolbar of the BP record selection window has the same option as the Data Picker window.

The **Open** option enables you to view the request details; however, depending on the status of a record, this option may not be available, as explained here:

- If the Status of a record is "Completed/In Progress/Error/Failed," the log has a Close option. In this case, you can only view the update request details.
- If the Status of a record is "Not Started/Not Scheduled," the update setup window opens.

The **Find** option enables you to search for a particular request in the log, using the following search parameters:

- **Name**
- **Source Business Process**
- **Source Business Process Record**
- **Status**

Note

The logical operators are the same as in any String or Pull Down field.

The **Cancel Request** option enables you to cancel a scheduled update. You can only cancel a request that has not started (that is, you can cancel a record that is not stamped with a Start Date.). You can cancel multiple requests. After you cancel an update request, the system changes the:

- Status of the request to: Not Started
- Schedule option to: None

The **View Details** option enables you to view the details of an update request. When you select this option, the system opens a report in PDF format that outlines the details of all the PM Book records that were updated successfully and those that were not.

PM Book Record Update Window

After you select the source PM Book Template record for the update, the **PM Book Record Update** window opens which contains multiple tabs. These tabs are based on the PM Book Template design and are not query-based tabs.

Note

Depending on the design of the Asset Business Process in uDesigner, you may see other tabs (Detail Form tabs) in the PM Book Record Update window. For example, you can see Time Schedules tab, Gauge Meter Schedules tab, and so forth.

The following describes each tab in detail:

- **General tab**

The General tab is fixed and has the following fields:

- **Name** (required)
- **Description** (optional)
- **Source Business Process** (read-only): The value in this field is the name of the PM Book Template Business Process.
- **Source Business Process Record** (read-only): The value in this field is the number of the PM Book Template record that is the source of the update.
- **Schedule** (block): This block has two fields (date and time picker) impacting the schedule of the update (Date and None). The date that you select must be greater than the current date and time.

- **Main Form tab**

The Main Form tab is fixed. The fields in this tab enables you to update the Upper Form field values of the PM Book record from the Upper Form field values of the PM Book Template record.

The Data Elements in the Main Form tab are based on the Data Elements that exist in the PM Book Template.

By default, all Data Elements are selected. Use the checkbox next to Data Element to select or deselect all other Data Elements.

The order of the fields is based on the Upper Form design.

Use the **View Record Details** option to open a read-only copy of a record. This is to assist the user with reviewing the existing values of the PM Book Template record.

- **Detail Form tabs** (Other tabs)

The **Update PM Book Records** window displays tabs based on the design of the Detail Form (in the left Navigator, select **uDesigner**, select **Business Processes**, open **PM Book Templates**, and then select **Design Form**). For example, if the Detail Form contains Time Schedules and Gauge Meter Schedules, the Update PM Book Records window displays the Time Schedules tab, Gauge Meter Schedules tab, in addition to the fixed tabs (General tab and Main Form tab).

The Detail Form tabs enables you to select the Line Items that need to be updated in the auto-created PM Book records, from the PM Book Template.

The following elements are available in each Detail Form tab:

Line Items

From this block, you can specify the Line Items that you want to get updated in the PM Book records, from the PM Book Template. The Line Items block displays all Line Items that exist in the selected template record and includes the following information about each Line Item:

- **Line No.**
The line number of the Line Item in the PM Book Template. The line number in the PM Book record may not have a one-to-one connection with the line number existing in the BP Book Template.
- **Short Description**
- **Line Item Details**
Each Line Item has a **View**, hyperlink, option that enables you to view the Line Item details, in View only mode.

Data Elements - <name> tab

This section displays the list of applicable Data Elements. Use the Data Element checkbox to select/deselect all elements. The Line Items listed here exist in the auto-created PM Book record.

When an Asset auto-creates a PM Book record, the Line Items, and contents, are copied over from the PM Book Template record associated with the Asset. The system associates a unique "guide" for each of the Line Items in the PM Book record and maintains a reference to the Line Items in the parent PM Book Template record. Since such a reference exists, the Line Item in the parent PM Book template record is changed, and the corresponding Line Item in the destination PM Book record is updated by means of this Push update.

New line items can only be added to the Time based tab. If new Line Items are added to the PM Book Template record, you need to conduct a push to add the new Line Items to the PM Book record, as new Line Items. The Data Elements of the PM Book records are updated as part of this push.

If the Line Items do not exist in the auto-created PM Book records, the system creates the Line Items. The new Line Item creation, in the PM Book records, follow the Line Item auto-creation logic, and the new Line Item creation does not refer to the Data Elements section of the tabs, at the time of update. The tab mapping that has been set in the design of the Asset BP forms the basis for copying over the field values in the PM Book records.

Project/Shell and Business Process Updates

To update a Business Process (BP) in the Project/Shell:

1. Go to the shell tab, and switch to **Admin** mode.

2. In the left Navigator, select **Setup**, and then select **Business Process Updates**.

Business Process Updates Log in Project/Shell

The Business Process Updates log in **Project/Shell** allows you to set up updates from a template to a record, at the **Project/Shell** level. The log consists of the following:

Menu

- File
- Edit
- View
- Help

Toolbar

- New
- Cancel Request
- Open
- Find
- View Details

Note

These options can be accessed through the Business Process Updates log menu options.

Columns

- Name
- Source Business Process
- Source Business Process Record
- Submit Date
- Schedule date
- Start Date
- Completion Date
- Status
- Requested By

The functions of the elements in the Business Process Updates log are explained in the following section.

Project/Shells and Preventive Maintenance Type BP

Preventive Maintenance Business Process (BP) Line Items generate Work Order BP records. You can set up a Preventive Maintenance type BP (Preventive Maintenance Book) to create Work Order BP records for assets at periodic intervals according to the service needs of the asset.

In the Preventive Maintenance Book, for:

- Floating Line Items holding non-terminal work orders, you cannot edit the following DEs:
 - Family Identifier
 - Line Item Status
 - Schedule Type
- Fixed Line Items holding non-terminal work orders, you can edit the following DE:
 - Line Item Status

The Work Order BP records refer to a Preventive Maintenance type BP (Preventive Maintenance Book) to view all the Work Order BP records for that Preventive Maintenance type BP (Preventive Maintenance Book).

The Business Process Updates log in **Project/Shell** allows you to set up updates from a PM Book Template to a PM Book record, at the **Project/Shell** level.

If you link your Time and Meter Schedules within a PM Book BP, you can avoid generating multiple PM work orders if a meter-schedule occurs sooner than a time-schedule, or conversely. The following scenario provides a good example for this feature:

A commercial vehicle is scheduled for an oil change either when it reaches 5000 miles (meter) or 12 months (time) after the last oil change, whichever is reached first. If the vehicle reaches 5000 miles prior to 12 months, the system generates a PM work order and automatically prevents a second PM work order when the 12 months time frame comes. Conversely, if 12 months passes and the vehicle does not reach 5000 miles, the system generates a PM work order and automatically prevents a second PM work order when the vehicle reaches 5000 miles.

To prevent generating an additional work order, in such a case, you can use the "**uuu_rec_related_family_id**" data element to link the meter-schedule and the time-schedule within a PM book or PM book template. To update the "**uuu_rec_related_family_id**" data element from PM Book templates to use for all PM Books, go to either of these locations:

- Shell (switch to **Admin** mode; in the left Navigator, select **Setup**, and then select **Business Process Updates**)
- **Company Workspace** tab (switch to **Admin** mode; in the left Navigator, select **Company Workspace**, and then select **Business Process Updates**)

Once selected, all the PM Books will be updated with correct values from the related PM Book Template, according to the push schedule defined within this log.

For more information, see [Company Workspace and Preventive Maintenance Type BP](#).

Setting Up the Code and Records-based Configurable Manager

Configurable manager, as well as classes, forms, and corresponding logs are designed in uDesigner (Configurable Modules) and deployed to Unifier. You must also define the business processes that work with the configurable manager.

Note

Assign a specific name for the configurable manager in uDesigner. The generic term used in the instructions is configurable manager.

Step 1: Design Code and Records-based configurable manager in uDesigner (Configurable Modules).

Step 2: Setup the Business Process Data elements under the Options tab and deploy the manager. After the manager has been deployed, classes can be designed and deployed.

Step 3 Set permissions.

Step 4: Configure the code and records-based manager.

Step 5: Set the template administration permissions.

Step 6: Create template sheets and add columns.

Step 7: Set permissions for the user.

Setting Permissions to Import Configurable Managers

You must have modify permission to import configurable managers. You can set view permissions to allow users to view configurable modules.

To access permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Data Structure Setup**, and then expand **Configurable Modules**.

Importing Code and Records-Based Configurable Managers

All designs, including configurable managers, are designed in uDesigner and deployed to Unifier. See [Importing Configuration Packages](#).

Note

Importing Forms that Contain Data Pickers: Data pickers point to a data source for the records they display. If that data source—the BP, shell, or manager class—to which the picker is pointing is not already in Unifier, you will receive a warning. The business process will not operate correctly until the data source is imported.

Deleting a Material Inventory Manager

This section describes how to manually delete a record under Material Inventory Manager from a shell template.

Note

You can delete a record under Material Inventory Manager from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the shell tab, and switch to **Admin** mode
2. In the left Navigator, select **Setup**, and then select **Material Inventory Manager**.
3. Select a record from Material Inventory Manager for deletion.
4. Select **Delete**.
5. When the confirmation message appears, select **Yes** to delete the record from the Material Inventory Manager.

Setting Permissions to Import Classes

Classes must be deployed before you can set permissions. Set permissions based on existing permissions for the uDesigner, which you can view by completing the following steps:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, and then expand **uDesigner**.

Importing Classes for Code and Records-based Configurable Managers

To import a class into the Unifier **Production** environment, see [Importing Configuration Packages](#).

Configure configurable manager classes

Imported configurable manager classes are listed in the manager configuration log, with a default status of inactive.

To configure a configurable manager class:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **[configurable manager]**. The Configurable Manager log opens. The log lists the classes.
3. Select a class record from the log, and select **Open**. The Configuration window opens.
4. Complete the **General** tab as described in the table below.
5. On the **Custom Print** tab, using the Microsoft Word XML schema, you can create a customized printed output.
6. To make the class active, select **Active**. This enables classes and sheets to be created in User mode. The class is also available to use as a project category or shell type.
7. Select **OK**.

In this field:	Do this:
Sequence Format	Define the sequence of the record numbers for records created for this class in User mode. This is similar to business process numbering.
Help File	You can upload a PDF file to use as a help file for the manager.
Auto Creator	Select the auto-creator.
Status	Activating the configuration makes the class available in User and Admin mode for creating records, sheets, and templates.

Run an Error Check on a Class

To error-check imported classes:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, select **Configurable Modules**, and open the applicable **[configurable manager]**.
3. In the Configurable Manager log, select one or more classes. To select multiple classes, press the **Ctrl** key or **Shift** key while selecting the classes.
4. Select **Error Check**. After validation, the error check window opens, listing any errors that were found.
5. To fix the errors, make the changes in uDesigner.

Configure a Data Picker for the Manager

If your Code and Records-based manager includes a data picker or a user data picker, it must be configured to examine and extract the records that should appear on the picker list. To do this, create a database query. (For more information on data pickers, see About Data Pickers and About User Data Pickers. For more information on queries, see Queries.)

After you have set up the query or queries for a data picker, and the picker is active, the queries will be launched whenever:

- The user selects the data picker field on a form
- The business process (BP) is auto-created
- A record is created or updated through integration (both CSV and Web Services)
- The data picker is updated via reverse-auto-population

In addition to setting up queries to extract records for the picker, you can configure the picker to filter the records that the query returns so that only certain records appear on the picker. This is particularly convenient, for example, if the manager attribute form contains a user data picker that automatically assigns users to an object as it is created.

To configure a data picker:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **uDesigner**, and then select any functional sub-node.
3. Open an item from the log (design object).
4. From the toolbar, select **Open**, and then select **Data Picker** to open the **Data Picker Configuration** window.
5. In the left pane, select the name of the data picker.
6. Create the query.

The query will search the database and extract the records to display on the data picker. The query will filter the records returned from the database according to a condition or conditions you specify. The condition(s) will "test" a field on the form to see if it passes or fails the criteria. If the field passes the criteria, Unifier will include it on the data picker.

 - a. Select **Add**. Unifier displays the **Add Query Condition** window.
 - b. In the **Data Element** field, select the field on the BP that you want to test with the condition.

For example, the condition might be that the status field on the shell must be "Active."

The window expands to show an active Condition field and additional fields where you can specify the query criteria.
7. (Optional) Filter the returned records.

This filtering option appears on Configurable Manager Attribute Forms that contain user data pickers. This option will filter the list of groups or users that appear on the picker. Use the instructions in the table below to filter the returned records.

Note

If any field in the query or queries is subsequently removed from the Configurable Manager Attribute Form, the entire query operation will be ignored. That is, if one query fails because a field was removed from the design, the system will ignore all the queries. If a field has been removed from a design, you must amend the query.

8. When you have finished, select **OK**.

In this field:	Do this:
Filter list of Users/Groups based on Project/Shell Membership	Select this checkbox if you want to filter the list of users on the picker to show only those with project/shell membership. In operation, the system will auto-populate and reverse-auto-populate the data picker with all users or groups, regardless of this checkbox. However, at runtime, the system will filter the picker for the user if you select this checkbox. Note If you select this option, the rest of the filtering options will be disabled.
Group Membership	Select the group from which you want to specify a user or users. The drop-down list shows all the groups that are at the company level.
Project/Shell Membership	To add the user to the shell membership, select Add user to Project/Shell. To also add the user to the group selected in the Group Membership list above, select Add user as a member to the selected group. Note To use these options, the user data picker must be on the upper form, not the detail form. If Reverse Auto-population (RAP) is used to update the user data picker in BPs, it reflects the configuration of the destination BP's upper form. For example, if the Add user to Project/Shell and Add user as a member to the selected group checkboxes are selected, the system: • Adds the user to the project or shell of the destination BP if the user does not exist there. • Adds the user to the selected group.
Show results matching any condition	If the checkbox is selected, the query conditions will be "OR." When this option is selected, the value in the AND/OR column will be updated to "OR." If the checkbox is deselected, the value in AND/OR column will be "AND." If the checkbox is selected, records satisfying any of the query conditions would be displayed at run-time. If the checkbox is cleared, records which satisfy all the query conditions will be displayed.

Setting Template Administration Permissions

After you have configured a configurable manager, you can create templates to use with the manager.

When you activate a new class, you must grant permission to yourself, another administrator, or a group such as company administrators to administer class templates and create classes in User mode.

You must have administrator permission to administer configurable managers.

To access permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Data Structure Setup**, and select **Configurable Modules**.

Managing Class Template Sheets (Classic view)

You can create one or more class templates for each class for each configurable manager.

Create a class template

You can create a new class template manually or by copying an existing template that is the same class as the new template.

To manually create a class template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Configurable Modules**.
3. On the right pane, expand **Administration Mode Access** and then expand **General Administration**.
4. In the left Navigator, select the configurable manager. The templates log for the classes opens.
5. Select **New**. Select the class for which you want to create the new template. The Properties window opens. Complete the window as described in the following table, and then select **OK**.

In this field:	Do this:
Title	Enter the name of the sheet, which reflects the class name and is read only.
Description	Enter an optional description.
Display Mode	Choose one of the following: • Tree: Lists the codes in a hierarchical manner based on the code segments, mimicking the tree structure in the Navigator. • Flat: Lists the codes in a flat structure.

In this field:	Do this:
Picker	Choose one of the following to include: • All Records: All records created in the class are displayed on the sheet. • Records with statuses: Only records of the selected status are displayed on the sheet. Click Select, and choose one or more statuses from the list.

To copy an existing template:

1. To copy a template from the company level, select a class template from the log, select **Copy**, and then select **Template**. The Properties window opens with the information from the original template.
2. To copy a template from the project/shell level, select **Copy**, and then select **Project** or shell name.
3. Make changes as needed, and select **OK** to save the new template.

To access configurable manager class templates:

1. In **Admin** mode, go to the **Company Workspace** tab, select **Company**, select **Templates**, and then select **Configurable Modules**.
2. In the left Navigator, select the configurable manager. The templates log for the classes opens.

To search for a class template:

In the class template log, select **Find**. You can search for the template based on the fields available on the form used for the template. These fields vary depending on the design.

Add columns to sheet templates

You can add columns to configurable manager sheet templates. You can use these columns to capture data from business processes or manually entered data. You can add columns to the template, but cannot add rows.

Users with create permission on class sheets are allowed to create and define columns.

To add a sheet column:

1. Open the sheet.
2. Select **Columns**. The Columns Log opens.
3. Select **New**. The Column Properties window opens. Complete the window as described in the following table.

In this field:	Do this:
Name	The Name field is populated with the data source value selected. You can change this name as desired. It is helpful, but not required, to use a unique name.

In this field:	Do this:
Datasource	Select a data source. You can use a data source only once; however, you can use the column in a formula. For example, if one data source is Commits (Approved), and another is Change Commits (Approved), you can add them together in a new column called Total Commits (Approved).
Entry Method	Choose the data-entry method to use for the column. The choices available depend on the data source selected. The options include: • Manual entry: Users can enter data directly into the cell, or data is rolled up from another source, such as the form. • Formula: The options are Numeric, Date Difference, and Date Add. See Add a formula column. • Data Type: Applicable if the data source is SYS Business Process, a business process, or information from the project cost sheet. After selecting the data type, select Define to choose the data element or define a formula based on the data element.
Data Format	Specify how you want the data in numeric columns to appear. • Show as Percentage: Data displays as a percentage. For example, if a user enters 0.25, it displays as 25%. • Decimal Places: Select the number of decimal places to display. Note When entering the percentage values in your sheet, if you are working in Classic View, enter the value by using decimal number format. For example, for ten percent, enter: 0.1, and if you are working in Standard View, enter the value by using percent format. For example, for ten percent, enter: 10%. The value that Unifier uses to validate the value of the Percentage column, when applicable, will be: 0-100. If the data element was defined in uDesigner with a specific decimal amount, it will override any decimal amount you specify here. • Use 1000 Separator (,): Data uses a separator for thousands. For example, 1,000 with a comma, not 1000. • Negative Number Format: Select whether negative values are displayed with a negative sign or in parentheses.

In this field:	Do this:
Display Mode	Select Hide to make the column invisible to users, or Show to display it.
Total	Controls what displays in the bottom summary row for each column: • Blank: The summary row remains blank. • Sum of All Rows: Displays the sum total of all row values for this column. • Use Formula Definition: Use the formula entered in the Formula field.
Column Position After	Determines the position of the column on the sheet. Select a column from the list.

To copy a column:

1. In the Column log, select a column, and select **Copy**. The Column Properties window opens.
2. Make changes as necessary for the new column. You must change at least the data source.

Add a formula column

You can add a formula column to the sheet for data sources that are based on either the data definitions SYS Numeric Logical Datasource or SYS Date Logical Datasource.

You can define formulas for the following types:

- **Numeric:** This option is available if the data source is SYS Numeric Logical.
- **Date Difference:** This option is available if the data source is SYS Numeric Logical. It is used for formulas that calculate the difference between two dates.
- **Date Add:** This option is available if the data source is SYS Date Logical. It can be used to add values to a date to calculate a new date.

To create a Numeric formula:

1. In the column Properties window, choose **Formula** and select **Numeric**.
2. Select **Create**. The Create Formula window for numeric formulas opens.
3. Select either **Item** or **Sheet** from the data type drop-down list. Item lists data elements that are defined on the form. Sheet lists columns that are already defined on sheet.
4. Build a formula by doing the following:
 - To include a data source in the formula, select the data source from the list, and click **Select**.
 - Select a mathematical modifier (plus, minus, and so on) and numbers on the keypad.
5. When the formula is complete, select **OK**.

To create a Date Difference formula:

1. In the column Properties window, choose **Formula** and choose **Date Difference**. Select **Create**. The Date Difference window opens.
2. For Earlier Date and Later Date, click **Select**. Select a data element. The list includes date type data elements from the form or existing date type columns on the sheet.

3. Choose one of the following:
 - **Calculations based on Calendar Days:** The calculation is based on calendar days and does not take company non-working days into account.
 - **Calculations based on Work Days:** The calculation is based on the company calendar working and non-working days.
 - **Show Partial Day**
 4. Select **OK**.
- To create a Date Add formula:
1. In the column Properties window, choose **Formula** and choose **Data Add**. Select **Create**. The Date Add window opens.
 2. For the **Date** field, click **Select**, and choose a data element from the list.
 3. For the **Add** field, click **Select**, and choose a data element from the list.
 4. Choose one of the following:
 - **Calculations based on Calendar Days:** The calculation is based on calendar days and does not take company non-working days into account.
 - **Calculations based on Work Days:** The calculation is based on the company calendar working and non-working days.
 5. Select **OK**.

Copy sheets under project or shell templates

You can copy one sheet for each project/shell template.

To copy a sheet under a project/shell template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select one of the following:
 - Select **Templates**, select **Projects**, and then select **All** or
 - Select **Company**, select **Templates**, select **Shells**, and then select the **[shell]**.
3. To copy a template from the company level, select a class template from the log, select **Copy**, and select **Template**. The Properties window opens with the information from the original template.
4. To copy a template from the project/shell level, select **Copy**, and then select **Project** or **Shell**.
5. Make changes as needed, and select **OK** to save the new template.

Deleting Sheets Template

This section describes how to manually delete a sheet associated with code-based or record-based Manager from a shell.

Note

You can delete a sheet associated with code-based or record-based Manager from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Configurable Modules**, select **Material Inventory Manager**, and then select **Sheets**.
3. Select a sheet associated with code-based or record-based Managers.
4. Select **Delete**.
5. When the confirmation message appears, select **Yes** to delete the sheet from the code-based or record-based Managers.

Manage sheet properties

The Properties window for the sheet maintains the name and display options.

To open the summary sheet Properties window:

In the Configurable Manager Sheets log, select the sheet, and select **Properties**.

In this field:	Do this:
Title	This is the name of the sheet, which reflects the class name and is read-only.
Description	Enter an optional description.
Class	Read-only field that displays the class associated with the sheet.
Display Mode	Choose one of the following: • Tree: Lists the codes in a hierarchical manner based on the code segments, mimicking the tree structure in the Navigator. • Flat: Lists the codes in a flat structure.
Picker	Choose one of the following to include: • All Records: All records created in the class are displayed on the sheet. • Records with statuses: Only records of the selected status are displayed on the sheet. Click Select, and choose one or more statuses from the list.

Managing Class Template Sheets (Standard view)

View Code-Based Managers Log

For details on how to view the code-based managers log, refer to the *Unifier Managers User Guide*.

View Code and Records-based Managers Log

For details on how to view the Code and Records-based managers log, refer to the *Unifier Managers User Guide*.

Setting User Permissions for Code and Records-Based Managers

For users to be able to work with the configurable manager class sheet, you must set user permissions for the class sheet.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **User Mode Access**, expand **Company Workspace**, expand **[configurable manager name]**, and select **Class Sheets**.

Setting Up the Cost Manager

The Cost Manager consists of several modules designed to help you track and manage cost in projects/shells and across the company.

Cost Manager Overview

The Cost Manager consists of the modules and features listed below.

Cost Sheets

Project/Shell cost sheet: The project/shell cost sheet is a detailed accounting of the project/shell's budget and costs. It works much like a spreadsheet within the system that calculates and maintains the project/shell cost information stored in the project/shell. The project/shell cost sheet rows contain unique CBS codes (or cost codes), which can be used to link project/shell costs to the general ledger for finance. Cost information can be entered manually, pulled from work packages or worksheets, or rolled up automatically from business processes when transactions occur.

Company cost sheet: The company administrator can create a company-level cost sheet to display cost data across projects/shells. Projects/shells on the company cost sheet are added by default as project/shell-level cost sheets are created. Only active and on-hold projects/shells should be rolled up to a company-level cost sheet. Projects/shells are listed in order by project/shell number in an ascending order. Data rolls up to the company cost sheet columns from individual project/shell cost sheet columns by data source.

Work packages: In addition to a project/shell cost sheet, multiple work packages may also be defined. A work package is a group of cost sheet rows that is a subset of the project/shell cost sheet. Work packages provide insight into the budget without providing full access to the details of the project/shell cost sheet.

Worksheets: Cost worksheets can be created to support the project/shell cost sheet. They can be used as sub-cost sheets, enabling specific calculations or data entry in a separate sheet, which can then be rolled up into a defined project/shell cost sheet column. For example, a worksheet can be used to offload complex calculations, which can be rolled up into a single cost sheet column. Worksheets support manual data entry and formulas. Business processes do not roll up to worksheets. Permissions can be controlled for individual worksheets. Worksheets are not independently reportable; however, cost sheet columns that reference worksheets can be reported on.

Funding Manager

Company funding sheets: The company funding sheet tracks all sources of funding across all projects/shells. You create only one sheet per company. Funding sources that are made available at project/shell sheet level are rolled up to the company sheet, which maintains the overall fund information. After it is created, the company funding sheet can be edited, but not

deleted. The company funding sheet must be created before creating individual project/shell funding sheets.

Project/Shell funding sheets: The project/shell funding sheet tracks how funding is being allocated and consumed at the project/shell level. Project/shell fund sheets work in conjunction with the company funding sheet. Allocating funding sources at project/shell level can be done manually or through a business process. A funding template and company funding sheet must be complete before you can create a project/shell funding sheet.

Commitment funding sheets: You can optionally set up commitment level funding, which allows you to allocate specific project/shell funds to individual base commit records. This works in conjunction with the SOV sheet to track base and change commit lines and balances.

Cash Flow

The Cash Flow module includes the ability to create multiple baseline, spends, forecast, and custom curves, and compare them on one cash flow worksheet. You can create data source, distribution profiles, and cash flow curve templates to simplify creation of cash flow in multiple projects/shells. Administrators can also set up base commit business processes to create cash flow curves automatically for the commitment record at a particular workflow step (or for non-workflow BPs, when the record is complete).

Earned Value

The earned value module provides quantitative tracking information about project/shell status using earned value analysis. It provides specific numerical measurements for reviewing progress as the project/shell team advances through the work tasks allotted to the project/shell schedule. The module helps project/shell managers track whether projects/shells are on schedule and on budget. It provides accurate and consistent methods to estimate the percent of budget spent, percent of work done, and percent of time elapsed.

Schedule of Values (SOV) Sheet

The schedule of values (SOV) module provides a way to assemble information from contract, change order and invoice/payment business processes into an SOV sheet, streamlining the process of invoicing for completed phases of a project/shell. SOV functionality is available with uDesigner-created cost BPs for which the Allow creation of Schedule of Values option is defined.

The business processes can be designed to create an SOV sheet automatically upon reaching the designated step.

The following are the SOV sheets types:

- General Spends
- Payment Applications
- Summary Payment Applications

Generic Cost Manager

The Generic Cost Manager captures cost-related activities for a generic shell. These include costs like rent, lease payments, landscape care, building maintenance and repair, remodel of building interiors, and more.

With this manager, you can capture and view cost transaction information based on a timescale, such as quarterly or yearly. Each shell can have one Generic Cost Manager. The Generic Cost Manager uses specific generic cost business processes as a data source.

Grouping Line Items and Auto-Creation

You can group line items during auto-creation of BP records, in Lease type business process (BP).

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Business Process** to open the **Business Processes** log pane.
3. From the **Business Processes** log, select a Leases BP, for example, **Leases - Tenant BP**.
4. Select a BP record, and select **Open** to open the Business Process Setup window.
5. Select the **Auto Creation** tab.
6. From the left pane, select **Payment Request** (or **Payment Invoice**).
7. On the right pane, select **Enable grouping of line items when auto-creating records from line item tabs**.
8. From the **Group By** field, click **Select**, and proceed to select the data element, or elements, that you want from the **Select Data Elements** window.
9. When finished, select **Apply**, and then select **OK**.

Consolidating strings cannot take place if the field values are different. As a result:

- If you select a data element other than "Payment Type" (uuu_lse_pay_type) in the **Group By** field and the auto-created record has a different payment type across the grouped line items, the auto-created BP record will have a blank payment type.
- Same logic is followed if a data element is present in the auto-created BP record, but the data element has a different value across the line items.

Cost Managers and Unifier Functional Areas

The standard Cost Manager and the Generic Cost Manager work with different areas of the system. This table lists the areas and indicates which cost manager works with each area.

Cost Manager	Company	Shell (CBS)	Shell (Generic)
Cost Manager (standard CBS)	X	X	
Generic Cost Manager			X

The cost data from Project (Standard) and Shell (CBS) can both roll up to the Company level. The cost data from Shell (Generic) does not roll up to Company Level.

About Currencies and Exchange Rates

The cost management system supports multiple currencies and exchange rates. The functions that the system uses are exchange rates sets, effective dates, future exchange rates, base currency, project currency, transaction currency, project/shell currency options, and currency pickers. What follows are descriptions of each of these functions and how they are used.

Currencies

To configure currencies:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Currencies**.

The Currencies page is where an Administrator can manually add new currencies to suit the company business needs, in addition to the predefined list of currencies. You must have the applicable permission to access the Currencies sub-node. Depending on your permissions, you can use the Currencies log to add new, modify, and delete currencies. You can also search for a specific currency.

To view the Currencies node in the Permission tab of the User properties:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Standards & Libraries**, and then select **Currencies**.

An Administrator can set up both users and Groups permissions to the Currencies sub-node.

- A user that has the "Create" permission can add, modify, and view currencies.
- A user that has the "Modify" permission can modify and view currencies.
- A user that has the "View" permission can view currencies.

The Currencies log includes a list of predefined currencies displayed in alphabetical order. In addition:

- Currency code is displayed for all the existing currencies.
- If currency symbols exist, the currency symbols are populated under the Currency symbol column.
- Users who have permissions can modify the predefined currencies.
- Description lists all the countries that use that currency.
- The Decimal Places field is read only, as it matches the decimal places used by the currency.

Note

The number of decimal places can only be defined when a new currency is added. The number of decimal places for an existing currency cannot be edited.

To add new currencies:

1. From the toolbar, select **New**.
2. In the **Currency Details** dialog box, enter the following:
 - **Currency Name:** Enter a name in this text field (maximum of 250 characters). The Pipe character (|) and back slash (\) are *not* allowed.
 - **Currency Code:** Enter a code in this text field (maximum of 8 characters). The Pipe character (|) and back slash (\) are *not* allowed.
 - **Currency Symbol:** (Optional) Enter a symbol in this text field (maximum of 8 characters). The following characters and patterns are *not* allowed:
 - Single characters such as: . , () -
 - Characters such as: | ' " \
 - Patterns such as: \$\$ \$& \$` \$'
 - **Description:** (Optional) Enter a description in this text field (maximum of 500 characters).
 - **Decimal Places:** (Optional) Select the applicable number of decimal places, from 0 to 4.

Note

After the currency is saved, the **Decimal Places** field becomes read-only and cannot be changed.

3. To save the currency, select **OK**.
4. Validate the new currency by ensuring that the:
 - Currency Name is unique and does not exist in the predefined list.
 - Currency Code is unique and does not exist in the predefined list.
 - Number of characters entered in the text field does not exceed the limit.

To update a currency:

1. Double-click the applicable currency.
2. Make the applicable changes.

After you have created a currency and defined the exchange rates for it, you can modify the Currency Name, Currency Symbol, and Description. You cannot modify the Currency Code.
3. To save your changes, select **OK**.

To add new currencies:

Select the applicable currency, and select **Delete**.

Note

- You cannot delete a currency that has been used to define exchange rates.
- You cannot delete the Base Currency defined by your Company Administrator.

To search for a currency:

1. From the toolbar, select **Find**.
2. In the Find window, select the logical operator and enter the applicable search parameter in the Currency Code or Currency Name text field, or both.
3. Select **Search**.

To view the Audit Log:

1. Select the applicable currency.
2. From the **View** menu, select **Audit Log**.

The Audit Log displays the additions and modifications applied to currencies. Audits log lets you select a record to see the audit information.

Show Currency List window

The Show Currency List window, which you can see when you are defining the exchange rates, displays a list of currencies that you have defined in the Currencies sub-node. The Show Currency List window includes a Description field that lists the country name; if there are multiple countries that share the same Currency Name, the country names are listed and separated by a comma (for example, for Currency Name of Euro (EUR), the Description field lists: Andorra, Belgium, France, and so forth).

Note

If the currency name is modified, the existing exchange rate CSV template fails. You must export the exchange rate template again for the new currency name. The existing Web Services calls for record creations and updates fail if the currency names are modified.

Similar to other custom string translations the currency names can be translated for internationalization.

Base currency

The Base Currency is the default currency specified by your Company Administrator when that person signs into the system the first time. Upon creation, the Base Currency is fixed and cannot be changed. The Base Currency becomes the default currency for projects/shells; however, the default currency can be changed during project/shell creation. Company-level cost data roll-ups can draw from multiple projects/shells. Each of these projects/shells can have a different project currency.

Project currency

A Project Currency is the currency that was selected as the project/shell-level default currency during project/shell creation. This can be different from the Base Currency, and you must take the following steps before you save the new project/shell.

- First: Before creating the project/shell, verify that the non-base currency exists in the Exchange Rate Set.
 - If it does not, you can add it.
 - If the exchange rate effective date is in the future, you cannot add it to the project/shell currency set.
- Second: During project/shell creation, add the non-base currency to the project/shell.

- **Third:** During project/shell creation, select the non-base currency as the project/shell default currency.

The system calculates and stores costs in the project currency. Business process records created in a non-project currency, such as a transaction currency, use the exchange rate that was active at the time of record creation for currency conversion to project currency.

Project/shell currency options

When adding a currency to a project or a shell, you have the options to float, hedge, or peg the currency rate. These options establish how to handle fluctuations in that currency's market rate.

- **Float:** A currency's value fluctuates according to the foreign exchange market. The system updates currency exchange rates according to the effective date of the **Exchange Rate** set.
- **Hedge:** Intended to reduce future risk of currency fluctuations.
- **Peg:** The currency exchange rate is fixed. Pegging impedes project currency conversion in a project or a shell.

Role rates changes due to currency exchange rate changes only consider Float and disregard Hedged or Pegged rates.

Transaction currency

This is a currency that was added to the project/shell Currencies, and picked at run time using a currency picker on the commitment business process. Upon record creation, the system uses the current active currency exchange rate in the Exchange Rate table to convert a transaction currency to the project currency.

Cash flow curves display data in the transaction currency, if different from the project currency. At run time, users can switch between currency views, but they can only modify values in the transaction currency view.

Currency picker

Currency pickers are available only for the upper form of a cost-type commitment business processes such a contract or a change order. This means all line items will be in the record, or transaction, currency.

Exchange Rates

To configure exchange rates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**.

The Exchange Rates page is where you can add currencies and define their exchange rates against the base currency, which was specified by your Company Administrator when that person signed into the system the first time. You can add currencies, manage currency exchange rates, and set currency effective dates as needed. Each line in the Exchange Rates log is considered a set.

Note

In addition to the predefined list of currencies, an Administrator can add new currencies to suit the company business needs.

Currency conversions use the exchange rate defined in the active Exchange Rates set. Until you modify a currency rate, the system uses the last active rate for that currency.

You can take the following actions to manage currencies:

- Create a New Exchange Rates set. You can make the set active today, or you can set the effective date to a future date, or you can set the effective date in the past.
- Modify an existing Exchange Rates set that has a future effective date. You can modify rates in a set until it reaches the effective date. You can change the effective date to as soon as tomorrow, but you cannot change the effective date to today. You can edit Exchange Rate Records whose effective dates are in the past.
- Set an Effective date: On the chosen date, at 12:00 am system date and time—in your time zone—the effective date becomes active.
For example:
 - Your time zone is Munich, Germany (UTC + 1)
 - April 20 you add a future exchange rate and set the effective date as May 1
 - May 1 at 12:00 am the currency rate takes effect in Munich's time zone
 - April 30 at 3:00 pm the currency rate takes effect in Los Angeles' time zone

Note

Effective dates for the new exchange rates records can be set in the past.

View Exchange Rates

According to the date, it displays:

- Currency Name
- Currency Symbol
- 1.0 Base Currency
- Effective Date

Future currency exchange rates

Future exchange rates let you plan ahead for currency fluctuations. The system uses the active exchange rate based on the effective date; however, cash flow curves show currency rate changes at the beginning of the first full month the rate is in effect.

In the Baseline details example that follows, you can see differences in values due to future exchange rate conversions.

- The transaction currency is INR.
- The project currency is EUR.
- The distribution is linear.

- The distributed values are 37,000 INR per time period.
- May and June rates take effect on the first of the month, respectively.
- A July future exchange rate takes effect in Unifier on 07/02/2012, so the system continues to display the value of the June rate in the cash flow.
- The August rate shows up in the cash flow curve on 08/01/2012.

Baseline details						Project Currency: Euro (EUR)				
Number	Name	From Date	To Date	Profile	Total	Unassigned	05 12	06 12	07 12	08 12
BCGS -0002	GS Contracts 2	05/01/2012	02/28/2013		4221.49	0.00	558.49	474.83	474.83	407.00

Exchange Rates - Current View: All			
14 Item(s)			
Effective Date	Base Currency	Created By	Status
04/19/2012 02:48 PM	United States Dollar (USD)	Terry Smith	Active
05/01/2012 12:00 AM	United States Dollar (USD)	Terry Smith	
06/01/2012 12:00 AM	United States Dollar (USD)	Terry Smith	
07/02/2012 12:00 AM	United States Dollar (USD)	Terry Smith	
08/01/2012 12:00 AM	United States Dollar (USD)	Terry Smith	
09/04/2012 12:00 AM	United States Dollar (USD)	Terry Smith	

Additional information

For cost transactions used in a Derived Curve, the exchange rate used is based on the latest update date of the BP record.

The `uuu_effective_date` is not used for determining the rate to be used on a BP Record.

Managing Currencies and Exchange Rates

The exchange rate set defines the currencies that are available for use within the system and their corresponding exchange rates, which are based on the company base currency. The exchange rate set that is currently active in the system will display a status of Active. All previous sets are retained, so you can view the currencies and rates that were active in the system in the past. Future currency rates are also listed in the log.

To view the company base currency:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**. The Exchange Rates log opens, displaying the following information:
 - **Effective Date:** This is the date the base currency and its associated exchange rates became active. If you have not yet created an exchange rate set, there will be one default listed in the log, created by the Site Administrator.
 - **Base Currency:** This is the base currency used by the company.
 - **Created By:** This field identifies the user who created or modified the exchange rate set.
 - **Status:** The status indicates which set is active. Only one exchange rate set can be active at a time. View currencies and exchange rates (exchange rate set).

To view an exchange rate set:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**. The Exchange Rates log opens.
3. Select a set from the list, and select **Open**. The Edit Currency window opens, displaying the list of available currencies and their exchange rates.

Add a currency to the exchange rates

To add additional currencies, you must create a new exchange rate set. Existing exchange rate sets can be modified until the effective date is reached and that set becomes active. Old sets are inactivated and saved for archival purposes. You can add as many sets as you like, if each set uses a unique effective date.

To add a currency to the exchange rate set:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**. The Exchange Rates log opens.
3. Select **New**. The Edit Currency window opens. The Co. Currency tab of the window displays all currencies that were added in previous exchange rates sets.
 - The Base Currency field is fixed.
 - In the Effective Date field, you can select a future effective date, or a past effective date, for any exchange rate in the exchange rate set.
4. Select **Add**. The Edit Exchange Rate window opens.
 - In the Currency Name field select a currency from the currency list.
 - In the Rate field, enter the exchange rate multiplier to convert the new rate to the company base rate. For example, if the base currency is United States Dollar (USD), and you are adding Euro (EUR), then the exchange rate is the number of EUR in \$1 USD; that could look like $0.76 = \$1$, so in this case you would enter .76.
5. Select the date icon in the Effective Date field, and select the date this exchange rate set becomes effective.
 - If you do not select an effective date, the system uses 12:00 am local time (tomorrow morning) as the effective date.
 - If the effective date is in the future, the current exchange rate set remains active until the effective date of the new exchange rate set.
 - The future exchange rate set remains editable until the effective date is reached.
 - Before you save the exchange rate set, you can remove a currency that you just added. After the exchange rate set is saved, you cannot remove that currency and the system will carry forward that currency in any new currency exchange rate sets.
 - You can create new exchange rates records for effective dates in the past.
 - These past dated exchange rates can only be used to define Derived Curves within Cash Flow, in Schedule Manager and for EVA calculations.
 - Existing cost transactions in the system will not get updated on creation of new Exchange rate records with historical effective dates.

6. Select **OK** to save the exchange rate set.

To modify an exchange rate:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**. The Exchange Rates log opens.
3. Select **New**. The Edit Currency window opens.
4. Select a currency from the list, and select **Modify**. The Edit Exchange Rate window opens.
5. Enter the new rate, and select **OK**.
6. Enter the Effective Date. The effective date defaults to 12:00 am local time tomorrow morning.
 - If you want the rate to take effect immediately, you can enter today's date.
 - You can enter a future effective date, and the current exchange rate set remains active until the effective date.
7. Select **OK** to save and exit the Edit Currency window.

Note

You can edit the Exchange Rates defined in existing Exchange rate records (open an existing record to open the **Edit Currency** window).

To copy an exchange rate set:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**. The Exchange Rates log opens.
3. Select an exchange rate set.
4. Select **Copy**. The Edit Currency window opens.
From here you can:
 - Add additional currencies.
 - Modify exchange rates.
 - Set an effective date for the exchange rate set.
5. Select **OK** to save and exit the Edit Currency window.

Importing and Exporting Exchange Rates

You can create and update exchange rates through a CSV file. For example, you can import the exchange rates you are using in your enterprise resource planning (ERP) system into the system so that the rates match in both systems.

You can import exchange rates with a CSV file by doing the following:

- Export a copy of the CSV file structure.
- Populate the CSV file with currency rate information.
- Import the CSV file into the system.

To export a copy of the CSV file structure:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**.
3. From the toolbar, select **Export**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download the file manually.

To populate the CSV file with exchange rate information:

1. Open Microsoft Excel (or another program compatible with the CSV format), and open the exported CSV file.
2. Enter currency exchange rate information in the spreadsheet. The fields are discussed in the table below.

Note

- Do not delete or change the order of the columns.
- Successful import creates a currency exchange rate set with the Active status.
- Only the currency code is validated, but the system will add to the exchange rate set the values you specify in the CSV upload file.
- Only the absolute value for the exchange rate is considered. If you enter a negative value, the negative sign is dropped and only the value is considered.
- You can enter new rates, or update existing rates.
- Only the first five decimal values of the exchange rate are imported; if less than five decimal values are entered, zeros are added during the import to add up to five values.
- If you remove an exchange rate from the CSV file, the rate is retained in the system, and is not deleted.
- If there are errors in the CSV file, the system will not import the CSV file.

3. Save in CSV format.

In this column:	Do this:
Currency Name	Enter the name of the currency. For example, United States Dollar. This currency name is not validated and is for reference only.
Currency Code	Enter a valid currency code. Only the Currency Code is required and validated.
1.0 Base Currency =	Enter the exchange rate for the currency. The number you enter rounds at ten decimal places. Enter numbers and decimal points only; do not enter special characters.

To import the CSV file:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**.
3. From the toolbar, select **Import** to import the completed CSV file.
4. Select **Browse**, and navigate to where you saved the file.
5. Select **OK** to import.
Only files with exchange rate information in the correct format will be imported. If the upload fails, the CSV file will contain an error message that explains why the upload failed. The user who imported the CSV file is listed in the Audit log as the User.

To fix import errors:

1. Re-open the CSV file.
2. Delete rows that were successfully imported.
3. Fix the rows that were not imported correctly.
4. Re-import the file.

To export exchange rates to your desktop:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Exchange Rates**.
3. From the toolbar, select **Export**.

Depending on your browser, the CSV file will be automatically downloaded or you will be prompted to download the file manually.

Setting Up Cost Sheets

The following is provided as a reference for creating, setting up and managing the Cost Sheet portion of the Cost Manager.

How to Set Up the Cost Manager (Cost Sheets)

Before you begin: Ensure that currencies and exchange rates have been set up. Verify that all Cost Codes have been added or imported. Before you can create the Cost Template, you must create the necessary Cost Codes Data Definition(s) which will be used to build your CBS Codes. CBS Cost Codes can be single or multi segment codes. See [Importing and Exporting Exchange Rates](#), [Add a Basic Data Definition](#).

Step 1: Design and deploy the cost attribute form. After it is deployed, the cost attribute form becomes the CBS Detail window, used to create and manage CBS codes in the project/shell cost sheet. This is an optional step. If you do not create a cost attribute, a default form will be used to create CBS codes. (See [Importing the Cost Attribute Form](#).)

Step 2: Configure permissions. (Refer to the *Unifier Data Reference Guide* for cost manager permission settings.)

Step 3: Create a cost sheet template. You must create at least one cost template before you can create cost sheets. You can use the template to create project/shell cost sheets, or a cost sheet within a project/shell template. You can add columns to the template, which can be used to capture transaction data from cost business processes, create formulas, manage the budget, manually enter data, link to the funding manager, and much more. You can create the CBS codes in the template, which are the rows on the sheet. You can also set up columns and rows on individual cost sheets, following the same procedures.

Step 4: Create a project/shell cost sheet. You can create a cost sheet directly in the project/shell, or in a project/shell template (when you create projects/shells from the template, you can include the cost sheet). (See [Creating a Project or Shell Cost Sheet](#).)

Step 5: Define the project/shell budget. After creating the project/shell cost sheet, you can distribute the budget. This is done in User mode.

Optional steps:

- **Create work packages.** This is done in user mode.

- **Create worksheets.** Worksheets can be used as mini-cost sheets, linked to project/shell cost sheet columns. You create a worksheet template first. (See [Creating Worksheet Templates](#).)
- **Create company cost sheets.** This is optional. The company cost sheets are used to summarize project data. You can configure these sheets to display specific data by adding or removing desired columns. The rows correspond to each individual project cost sheet. The company-level cost sheet summarizes project data across the company. The company cost sheet can also be mapped to company level account codes, which can allow you to link project CBS codes with company level account codes. (See [Setting Up the Company Cost Sheet](#).)
- **Design and deploy cost business processes.** Use these to enable transactions against the cost sheet.
- **Set up a company accounts sheet.** (See [Setting Up a Company Accounts Sheet](#))
- **Set up SOV.** (See [Setting Up Schedule of Values \(SOV\)](#))
- **Set up Funding.** (See [Setting Up the Funding Manager](#))
- **Set up Rules.** (See [Setting Up the Rules Engine](#))

Importing the Cost Attribute Form

A Cost Attribute Form (created in uDesigner) is used as the CBS Detail window. The CBS Details window is used to create rows (CBS Codes) to project/shell cost sheets.

You can have only one Cost Attribute Form per company, which will be used for CBS Details window across all projects/shells.

To import and deploy a Cost Attribute Form into Unifier **Production** environment, see [Importing Configuration Packages](#).

Configuring Cost Manager Permissions

Refer to the *Unifier Data Reference Guide* for cost manager permission settings.

Cost Sheet Template at Company Level

To access cost sheet templates at the Company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.

You can use this log (**Create**) to create a **Cost Sheet** or **Worksheet**.

Create a Cost Sheet Template at Company Level

The following procedure describes how to create a cost sheet template at the Company level, from the **Company Workspace** tab.

To create the cost sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
3. Select **Create**, and select **Cost Sheet** to open the **Create Cost Sheet Template** window.
4. Enter the needed information in the fields under the following blocks:
 - **General** block
Defines general properties of the template:
 - Enter a unique **Name**, which is used to identify the template in the log and when creating a project/shell cost sheet from the template. When you create a cost sheet from the template, the title will default to Project Cost Sheet and will not be editable.
 - Enter the **CBS Code** title that your company uses. For example, **Account Code**, **Cost Code**, or **CBS Code**.
 - Enter the **CBS label** that your company uses. For example, **CBS Item**, **Cost Item**, or **Account Description**.

You can select a **Default View** for the template. This can be edited in the Project Cost Sheet. See [Define Cost Sheet Default View \(General tab\)](#).
 - **Structure** block
Defines the structure of the CBS Codes (or Cost Codes) for use within the cost sheet. This remains editable in cost templates, but after it is set in a project/shell cost sheet, it cannot be changed as this tab defines the CBS Code structure for the project/shell.
 - **Options** block
Defines labels for the two default columns, and details on forecast handling. See [Define Cost Sheet Options at Shell Level](#).
5. Select **Save**.

The cost template that you create appears in the **Cost Templates** log. After creating the cost sheet template, you must open the sheet to add columns and rows.

To open the cost sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
3. Select a template and open it either by double-clicking it, or by way of the *gear menu* (⚙).

Define Cost Sheet Default View (General Block) at Company Level

The cost sheet default view refers to how the cost sheet appears when it is first opened.

To define the general properties of the template::

Enter values in the following fields:

- **Name**
Enter a unique name. This field is used to identify the template in the log and when creating a project/shell cost sheet from the template. When you create a cost sheet from the template, the title will default to Project Cost Sheet and will not be editable.
- **CBS Code Label** (no more than 32 characters)
Enter the CBS Code title that your company uses. For example, **Account Code**, **Cost Code**, or **CBS Code**.

- **CBS Item Label** (no more than 32 characters)
Enter the CBS label that your company uses. For example, **CBS Item**, **Cost Item**, or **Account Description**.

The labels determine how the CBS code columns will be labeled, according to your company conventions.

Note

If you will be importing cost sheet data, it is important that the column labels match those in the import files.

To define the cost column labels:

1. In the cost template Properties tab, go to the General Block.
2. Enter new labels for the **CBS Code Label** and **CBS Item Label** columns.
3. Select **Save** to save changes.

Note

You can also define the forecast (**Forecast** block) behavior for the sheet as well as enabling P6 as a source (**P6 Integration** block) in the Options block. You must select **Tree** as the structure of the new cost sheet template when it is enabled for P6 integration.

Define Cost Code Structure (Structure Block) at Company Level

You can define the structure of the cost codes used in the sheet, in the **Structure** block. The cost codes that are built from this structure are used throughout the project/shell, for example, in cost type business processes for cost transactions.

For an existing template, you can edit the cost template properties, rows, and columns, in the **Structure** block. You can also add default data to direct entry cells which can be copied to cost sheets created from the template. The following procedure describes how to edit a cost sheet template from the **Company Workspace** tab.

This structure remains editable in cost templates, which lets you make adjustments to the structure as needed. In project/shell cost sheets, after the structure has been defined, it cannot be edited.

The **Structure** block has the following elements:

- **Structure**
This defines the structure of the CBS Code rows and how they will appear on the cost template and sheets. Choose **Flat** (no indenting of rows) or **Tree** (allows indented, nested rows, and summary).
 - **Flat**
If you choose **Flat**, the cost sheet will display the CBS codes (rows) in a flat structure, with no indented rows. This is useful if you want to display all CBS codes at once.
 - **Tree**

If you choose **Tree**, you have the option of creating indented, nested rows, which can be collapsed into summary, or grouping, rows. This is useful if you will be creating a large number of rows that can be grouped into categories.

- **Sort CBS**

If you select the **Sort CBS** checkbox, the rows will be sorted in ascending order by CBS Code automatically when new cost codes are added (flat structure only).

The summary rows act only as grouping rows for their indented child, or leaf, rows. Data cannot be entered directly into a summary row.

- **Segment Preview**

- **Segment 1**

- ...

- **Segment 10**

Determine how many segments to use for cost codes. For example, your company may have a three-segment CBS code based on numerical values. You may have as little as one segment (each cost code is a single entity), or as many as 10. For **Segment 1**, select the drop-down (pull-down) menu, and choose the first segment.

The available segments correspond to the list of Cost Code Data Definitions. To view the list of definitions, go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Cost Codes**. The Cost Code Data Definitions page appears.

This is where you build the CBS codes (or "account" codes) that will be used for the cost sheet rows. CBS codes may consist of one or multiple (up to 10) segments. Each segment consists of a separate cost code data definition, as defined on the Cost Code Data Definitions page. You must define at least one segment.

Select one or more segments, up to 10, in the order (left to right) you want them to appear in the Cost Sheet rows.

Repeat the previous step for each additional segment you want to add.

Define Cost Sheet Options (Options Block) at Company Level

Under the **Options** block, you can set the following options for the cost sheet template:

- **Forecast Details**
 - **User Line Items**
 - **Transactions**
- **Forecast Inclusion**
 - **Manual**
 - **Auto**
- **Enable Cost Sheet Forecasting**
- **Enable p6 sources**

For the Forecast Details and Forecast Inclusion options, specify the configuration for managing the Forecast column of the Cost Sheet. *User Line Items/Manual* is the default configuration; the following are the configuration options:

- **User Line Items and Manual:** At any time, the cost sheet user can add, edit, or delete Line Items in the Cell Detail Window of the Project or Shell Cost Sheet for the *Yet to Buy/*

Allowance For Change (YTB/AFC) column. The user has to manually choose which commits are included in the forecast. Options for choices are:

- Auto-adjust YTB/AFC: For example, if you include a Commit for \$100 in Forecast, \$100 is automatically deducted from YTB
- Manually adjust YTB/AFC
- Make no change to YTB/AFC
- **User Line Items and Auto:** Do not use this combination. This scenario will automatically inflate the Forecast due to the manual adjustment of Yet To Buy (YTB).
- **Transactions and Auto:** Note the following:
 - Commits (for example, Base Contract, Change Order, Purchase Requisition) are automatically updated with changes to the Forecast, depending on the formula.
 - Adjustments are automatically included in the Forecast column upon approval as defined by the workflow.
- **Transactions and Manual:** Line Items can be added to the Cell Detail window of the Project or Shell Cost Sheet. No deletions or modifications can occur on existing line items. The user has to manually choose which commits are included in the forecast. Options for choices are:
 - Auto-adjust YTB/AFC: For example, if you include a Commit for \$100 in Forecast, \$100 is automatically deducted from YTB
 - Manually adjust YTB/AFC
 - Make no change to YTB/AFC

To define the cost forecast details and inclusion:

1. In the cost Properties windows, select the **Options** tab.
2. Complete the forecast details fields as described above.
3. Select **Save** when finished.

For the **P6 Integration**, the **Enable P6 sources** allows you to enable the Cost Sheet Template in Unifier to acquire data from the P6 Summary Sheets.

- If you select this option, you must select **Tree** for the **Cost Sheet Structure**.
- The Data Format in Cost Sheet Template Column "Properties" window shows has the "Decimal" option.

Cost Sheet Columns at Company Level

Cost columns specify the data sources (business process transactions, formulas, values entered manually, and so on) that will be displayed on the cost sheet. Default columns are the **CBS Code** and **CBS Item**. Cost columns can be added to cost templates, to project/shell-level and company-level cost sheets, and to worksheets.

These procedures apply to adding columns to a Cost Sheet, a Cost Sheet template, or a Worksheet template at the following levels:

- Project or Shell
- Company

Cost Sheet columns can be of the following types:

- **From Business Process:** Data is rolled up automatically from cost type business processes when the BP reaches the specified status (Business process transaction column).
- **Direct Entry:** Users can enter data directly to the sheet through line item or direct entries. Custom data sources can be applied to these columns to allow project/shell cost data to roll up to company cost sheets, and be reportable through user-defined reports (Manual entry column).
- **Line Item Content**
- **From Worksheet**
- **From Activity Sheet**
- **Formula:** The column values are calculated based on a formula that normally includes values from other columns. For example, if there are multiple cost type business processes affecting the sheet, you may want to have a column that shows the sum of all of them ("Total Commits"). Custom data sources can be applied to these columns to enable them to roll up to company cost sheets, and be reportable (Formula column). Formula-based columns that are based on BPs are not automatically updated if you change the name of the BP. For example, if your Project Cost Sheet includes a column such as **Contract & PO** that displays **Agreement (Approved) + Change Order – Contract (Approved)** when you hover over the column heading and you subsequently update the BP name from **Change Order - Contract** to **Change Order**, the information displayed in the hover label is not updated. To update the hover label, you can right-click the column name, select **Properties**, click **Select** in the **Formula** section, and make the applicable changes. You can also update the cost sheet template and use the **Update Shells** feature to update the applicable projects/shells.
- **Fund:** Provides additional functionality to work with the Funding sheet. For more information, see [Add a Funding Column to Project or Shell Cost Sheet](#) (Fund column).
- **SOV:** Provides additional functionality to work with Schedule of Value sheets.

In a Cost Sheet:

- If you set the format for the Total field as "Blank" in the column properties, the user will see a blank value for the Summary of All Rows (under the parent CBS Codes), and
- If the user exports the Summary Sheet by way of a CSV file, the exported CSV file will also include a blank value for the Summary of All Rows.

Add a Cost Sheet Column at Company Level

This general procedure can be used for adding columns is the same whether you are adding columns to a cost sheet (project/shell or company level), a cost sheet template, or a worksheet.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
3. Select a cost template from the log.
4. Select the *gear menu* () next to the cost template, and select **open**.
5. From the toolbar, select **Add Column** () to open the **New Column** dialog box.
6. Complete the fields as described below.
7. Select:

- a. **Cancel** to discard your changes
- b. **Save** to save your changes
- c. **Save & Add New** to save your changes and begin to add a new column.

In this field:	Do this:
Name	The name you choose will appear as the column header on the Project or Shell Cost Sheet. If you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.
Type	Cost Sheet columns can be of the following types: • From Business Process: Data is rolled up automatically from cost type business processes when the BP reaches the specified status (Business process transaction column). • Direct Entry: Users can enter data directly to the sheet through line item or direct entries. Custom data sources can be applied to these columns to allow project/shell cost data to roll up to company cost sheets, and be reportable through user-defined reports (Manual entry column). • Line Item Content • From Worksheet • From Activity Sheet • Formula: The column values are calculated based on a formula that normally includes values from other columns. For example, if there are multiple cost type business processes affecting the sheet, you may want to have a column that shows the sum of all of them ("Total Commits"). Custom data sources can be applied to these columns to enable them to roll up to company cost sheets, and be reportable (Formula column).
Datasource	All columns must be associated with a data source. The data source that you choose will determine which of the following options are available. The types of Data sources available are: • Single Sources: These values roll up from other sources. These include cost type business processes, some predefined cost columns. • Logical Sources: Choose one to create Manual Entry or Formula columns. • P6 Sources: To select the P6 Summary Sheet from which cost should role up. See Project or Shell Cost Sheet Column Data Sources.
Data Format	• Currency: Right-aligns column contents and includes a currency symbol, formatting the value to the specified currency for the sheet. • Percentage: Right-aligns the contents and includes a percentage symbol • Decimal: Right-aligns column contents and presents the value for the column as a Decimal (with two decimal digits). The prefix of currency symbol, or the suffix of percent symbol, does not appear in columns with a Decimal data format.

In this field:	Do this:
Display Mode	Refers to whether the column is displayed on the cost sheet. • Show: This is the default choice. This indicates that column will display by default on the cost sheet to all users with at least "view" permission for the cost sheet. • Hide: Hidden columns are active but not displayed on the cost sheet. Hidden columns can be accessed by users with "create" permission on the cost sheet.
Total	Determines what will display in the "Total" (bottom) row for the column: • Blank: The total of this column is not applicable and will not display on the cost sheet. Choose this column for percentage columns and other columns where it does not make sense to display the sum total. • Sum of All Rows: The sum total of the column values is displayed. • Use Formula Definition: For formula columns; the formula will be applied to the "Total" row in the same way it is applied to other rows in the column.
Column Position After	The new column will be inserted after the column selected.

Create a Formula in a Cost Sheet Column

This procedure addresses how to create a formula column for use on a cost sheet. (The general procedure also applies to cost sheet templates and work sheets.)

When creating a cost sheet column, selecting a logical data source lets you build a formula in which you can include:

- Other columns from this cost sheet
- Single data sources, such as business processes in a certain status
- Total elements, such as the tallied value of a column
- Data elements from single-record, non-workflow business processes

If you are creating a formula for forecasts (unaccepted), data sources are limited to business processes flagged in uDesigner for cost sheet forecasting. For example, if base commits and change commits were enabled for cost sheet forecasting, you will see base commits (unaccepted) and change commits (unaccepted) as available data sources for use in the forecasts (unaccepted) formula. You will not see other data sources that were not flagged in uDesigner for this purpose.

When you build your formula, think about which data sources will generate the result you want in your cost sheet column. For example, if you want to see total commitments, you can add contracts (approved) and change orders (approved).

Note

- Use care when selecting the Cost Column that you use to build your formula. You can possibly choose from Columns (columns in the sheet), Data Sources (values of business processes), Total Elements (totals from columns), or Data Elements (data elements on Information/General record(s), typically named Project Information). The source column that you use can affect the data values in your cost sheet. If you select an incorrect source, you can get a result you do not expect. Be sure that you know the source to use before you build your formula.
- Formula-based columns display a label when you hover over the column name to show what comprises the contents of the column. Formulas that are based on BPs are not automatically updated if you subsequently change the name of the BP. To update the hover label, you can right-click the column name, select **Properties**, click **Select** in the **Formula** section, and make the applicable changes. You can also update the cost sheet template and use the **Update Shells** feature to update the applicable projects/shells.

To create a formula:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
 3. Open the applicable cost sheet template.
 4. From the toolbar, select **Add Column** (.
 5. In the **New Column** dialog box, choose **Formula** as the type, select a **Datasource**, and then click **Select** in the **Formula** field.
 6. Enter the first value in the formula:
 - To enter **numerical values** into the formula, select the number keys on the on-screen keypad. (Include parentheses, % or decimal point as necessary.)
 - To add a **data element** or **column value** (existing columns on the sheet you are working on) into the formula, double-click an item from the left pane.
- As you build the formula, it appears in the Formula box in the upper portion of the window.
7. Select the appropriate operator: add, subtract, multiply, or divide.
 8. Continue to alternate between choosing values and operators to add to the formula.

Note

The system applies the operators in the order of proper mathematical procedure: from left to right, with multiplication and division first, followed by addition and subtraction.

9. To undo (reverse) the last action, select **Undo**; to clear the entire formula, select **Clear All**.
10. When the formula is complete, select **Save** to save your formula and return to the Column Properties window.

Example Formula

A user wants to create a "Yet To Buy" column that calculates 7% of the Assigned Budget column. To create this formula using the keypad in the Formula Creation window:

1. Select 7, and then select the percent % key. The value is displayed as 7/100.
2. Select the multiplier X.
3. Select Assigned Budget from the Cost Column pane on the left, and then click Select.

The final formula looks like this: $7/100 * \text{Assigned Budget}$

Cost Sheet Template at Shell Level

Project/shell cost sheets are created by copying from a cost sheet template or from an existing project/shell cost sheet in another project/shell; therefore, when you first set up the cost manager, you must start with at least one cost template that you can use to create a project/shell cost sheet (or cost sheet in a project/shell template).

To access cost sheet templates at the shell level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and then open the [shell template].
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet** to open the **Cost Sheet** log.

You can only use this log (**Create**) to create **Worksheet** with the following options:

- **From Template**
- **From Projects**

You cannot create a project cost sheet.

Get Data

If the activity data is integrated by way of old Get Data synchronization (by adding P6 project ID in shell details, General tab), the activity data will not roll up from the Activity Sheet to the Cost Sheet columns.

If the activity data is integrated by way of old (or new) Get Data synchronization (by adding P6 project ID in shell details, Integration tab), the activity data will roll up from the Activity Sheet to the Cost Sheet columns.

Create a Cost Sheet Template at Shell Level

You cannot create a project cost sheet template at shell level. However, a Cost Sheet is created by copying from a cost template or another project/shell cost sheet. See [Creating a Project or Shell Cost Sheet](#).

View Cost Sheet Properties at Shell Level

To view the cost sheet properties for Shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. Open the applicable project template.

4. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet** to open the **Cost Sheet** log.
5. Open a template.
6. Select **Menu Options**, and select **Properties**.

Define Cost Sheet Options at Shell Level

In the cost sheet template at the shell level **Properties** window, you can only define the **P6 Integration** option by enabling P6 as source (**Enable P6 sources**). This option allows you to enable the Cost Sheet Template in Unifier to acquire data from the P6 Summary Sheets. You can select this option only if **Tree** is selected as the **Cost Sheet Structure**, at the Company level (cost sheet template).

The **Properties** window at shell level has the following fields and the options that are selected are based on the selection at the Company level (cost sheet template):

- **Name**
- **Structure**
- **Segments**
- **CBS Code Label**
- **CBS Item Label**
- **Forecast Details**
- **Forecast Inclusion**
- **Enable Cost Sheet Forecasting**
- **Enable P6 sources**

Cost Sheet Columns at Shell Level

Cost columns specify the data sources (business process transactions, formulas, values entered manually, and so on) that will be displayed on the cost sheet. Default columns are the **CBS Code** and **CBS Item**. Cost columns can be added to cost templates, to project/shell-level and company-level cost sheets, and to worksheets.

These procedures apply to adding columns to a Cost Sheet, a Cost Sheet template, or a Worksheet template at the following levels:

- Project or Shell
- Company

Cost Sheet columns can be of the following types:

- **From Business Process:** Data is rolled up automatically from cost type business processes when the BP reaches the specified status (Business process transaction column).
- **Direct Entry:** Users can enter data directly to the sheet through line item or direct entries. Custom data sources can be applied to these columns to allow project/shell cost data to roll up to company cost sheets, and be reportable through user-defined reports (Manual entry column).
- **Line Item Content**

- **From Worksheet**
- **From Activity Sheet**
- **Formula:** The column values are calculated based on a formula that normally includes values from other columns. For example, if there are multiple cost type business processes affecting the sheet, you may want to have a column that shows the sum of all of them ("Total Commits"). Custom data sources can be applied to these columns to enable them to roll up to company cost sheets, and be reportable (Formula column). Formula-based columns that are based on BPs are not automatically updated if you change the name of the BP. For example, if your Project Cost Sheet includes a column such as **Contract & PO** that displays **Agreement (Approved) + Change Order – Contract (Approved)** when you hover over the column heading and you subsequently update the BP name from **Change Order - Contract** to **Change Order**, the information displayed in the hover label is not updated. To update the hover label, you can right-click the column name, select **Properties**, click **Select** in the **Formula** section, and make the applicable changes. You can also update the cost sheet template and use the **Update Shells** feature to update the applicable projects/shells.
- **Fund:** Provides additional functionality to work with the Funding sheet. For more information, see [Add a Funding Column to Project or Shell Cost Sheet](#) (Fund column).
- **SOV:** Provides additional functionality to work with Schedule of Value sheets.

In a Cost Sheet:

- If you set the format for the Total field as "Blank" in the column properties, the user will see a blank value for the Summary of All Rows (under the parent CBS Codes), and
- If the user exports the Summary Sheet by way of a CSV file, the exported CSV file will also include a blank value for the Summary of All Rows.

Defining Cost Sheet Views for Inclusion in Templates

You can define multiple views for a Cost Sheet template and link them to all or specific projects/shells so that they are listed in the **View** menu. You can update these views at any time and link them to all or specific projects/shells as the need arises. While these views cannot be changed by the users, they can use them as the basis for creating their own views.

Note

To determine what template to use, the system first checks the Shell Detail form to see whether a value for the **uuu_shell_template_picker** data element (DE) is defined. If the DE is not populated or is not used, the system checks to see whether a default template is specified. If so, the views associated with the default template are included.

To define a Cost Sheet View for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
5. In the **Cost Sheet** log, select and open the cost sheet.
6. From the **View** menu, select **Create New View**.

7. In the **Save View As** field of the **New View** window, enter a name for the new view.
8. Use the following topics to complete the available tabs:
 - [Columns Tab in the New View Window](#)
 - [Filters Tab in the New View Window](#)
 - [Group By Tab in the New View Window](#)
 - [Sort By Tab in the New View Window](#)
 - [Conditional Formatting Tab in the New View Window](#)
9. When you are done, select **Save**.
10. Use **Manage Views** to select the views that should be visible in the template after you import a configuration package.
See [Managing Cost Sheet Views](#).

Columns Tab in the New View Window

The sections under the **Columns** tab are: **Available Columns**, **Selected Columns**, **Left Lock after Column**, and **Right Lock after Column**.

In addition to the previous sections, there are three options located after the **Selected Columns** section: **Group Management**, **Group Selected Columns**, and **Delete Group**.

For a new view, the **Available Columns** section displays a list of all the columns from the **Default** view. **Cost Code** and **Cost Name** columns are not available in the list because they are part of all views by default. The columns that you have view restrictions for are also not available in the list.

The Cost columns listed under **Available Column** are grouped as **CBS Attributes** and **Sheet Columns**.

The **CBS Attributes** block items are sorted alphabetically.

In the case of a new view, the list in the **Selected Columns** section contains the **Cost Code** and **Cost Name** columns. You can select one or more columns from the **Available Columns** list and move those columns to the **Selected Columns** list.

Note

If you select **Save** without choosing a column from the **Available Columns** list, a view with **Cost Code** and **Cost Name** columns is created.

When you select multiple columns in the **Selected Columns** list and then select **Group Selected Columns** , you are prompted to enter a name for the new column group. The maximum character limit for a group name is 255 characters.

You can select two or more selected columns and group them under a new name, or you can create a column group first and then add columns to it.

The groups:

- Display with a distinct color in custom views.
- Only exist within the view in which they were created.

You cannot create a group just once and then use it within multiple views.

Upon choosing the **Group Management** option, a new window that shows the created groups as tabs is displayed. You can update the **Group Title** for each group, but know that the **Group Title** is a required field. Along with the lists of **Available Columns** and **Selected Columns in the Group**, there are also two checkboxes. You can select the **Show last column when group collapsed** checkbox as well as the **Collapse group by default** checkbox.

The **Available Columns** list displays the columns that exist in the default view of the cost sheet. One or more columns can be selected from the **Available Columns** list and moved to the **Selected Columns in the Group** list. Columns that are part of another group are italicized. Each group must contain at least one column, as empty groups are not retained. You can re-order the columns in a group by selecting any of the arrow options.

After you create a group, the group is displayed in the **Selected Columns** section of the previous window with a **Column Tree** icon  and the group name. This group name contains a hyperlink that takes you to the **Group Management** window and selects the previously selected column.

All changes are saved upon selecting the **Save** option.

If you choose a column in the **Left Lock after column** drop-down list, the list for **Right Lock after column** displays the remaining columns and, if applicable, any groups that you created, from the **Selected Columns** list. For example, if there are 20 columns in the **Selected Columns** list and you choose column 4 in **Left Lock after column**, **Right Lock after column** displays columns 4-19. Another scenario is if you select column 19 in **Left Lock after column**, **Right Lock after column** displays column 19.

The **Left Lock after column** drop-down list initially displays every column from the **Selected Columns** list, except for the last column and any groups that you created. **None** is selected in the drop-down list by default. When **None** is the value in the drop-down list, it means that no column has been chosen to be locked from the left side of the sheet.

For the **Right lock after column** drop-down list, **None** is selected by default. When **None** is the value in the drop-down list, it means that a right lock column has not been chosen for the view. The remaining values in the drop-down list consist of a dynamic list that gets populated based on the value chosen in the **Left Lock after column** drop-down list.

Filters Tab in the New View Window

For both Tree and Flat Structure cost sheets, there are three sections in the **Data Element** drop-down list on the **Filters** tab: **Cost Code segments**, **CBS Attributes**, and **Sheet Columns**. The **Cost Code segments** section displays each cost code segment as an attribute that can be used to apply filters to the cost sheet. The **CBS Attributes** section displays all “uuu” data elements (DEs), including hidden blocks but excluding Data Picker DEs and Multi Select DEs, defined for the cost breakdown structure (CBS) Attributes form in uDesigner. The **Sheet Columns** section displays all columns from the cost sheet in order.

Note

- Picker DEs and multiple-select input fields *cannot* be added as filters.
- The system only applies filters to leaf-level codes within the cost sheet. The summary cost codes do not show up in the filter results.
- Hidden, restricted, and deleted fields are *not* shown.

To create a filter:

1. Select **Add Filter**.
2. Do the following:
 - a. Choose a **Data Element**.
 - b. Choose a **Condition**: This drop-down list displays a list of conditions. This list is based on the type of data element (DE) selected. See [Condition options](#).
 - c. Choose a **Value**: Depending on the type of DE, choose a value that the query condition must meet.
 - **Data Element**: Lists the DEs on the Cost Code Attribute Form.
 - **Constant Value**: You can enter a full or partial entry of the value to filter by. This is similar to entering search criteria.

 Note

The default value for an integer drop-down list is 0. Therefore, the integer list can be used as a CBS attribute DE and defined as a filter with the criteria **is not empty**, which will result in the display of data with the default value.

3. To add additional filters, select **Add Filter** again, and repeat the preceding steps. You can use the same data element multiple times.
4. If you are using multiple filters, select the applicable operator that should apply to the set:
 - **And**: To specify that the view must match all listed filters, select **And**.
 - **Or**: To specify that the view should match any of the listed filters, select **Or**.

Group By Tab in the New View Window

Use the **Group By** tab to group rows in the Cost Sheet. The drop-down field in the **Group By** tab contains a list of columns that the user can see in the Cost Sheet, such as the cost code and cost item, as well as items from the Cost Attribute Form.

Sort By Tab in the New View Window

In the **Sort By** tab, all the columns from the default cost sheet are available, as well as items from the Cost Attribute Form.

Conditional Formatting Tab in the New View Window

In addition to using the **Filters** tab to create views that display specific data, you can use the **Conditional Formatting** tab to format columns based on specific conditions. This feature helps you visually identify rows within the column that match specific criteria. You can use different formats, such as background fill, font color, icons, and data bar, to customize the visual identification. You can format up to 10 columns in a sheet and use up to 5 format conditions for each column.

You can also apply conditional formats at the cell level, which lets you identify amounts or decimal-based values that match specific conditions. For example, you can use conditions to highlight amounts where the Total Cost Incurred is greater than the Forecasted amount for

specific cost codes. By using a condition such as Background Fill & Color, you can access your custom view and immediately identify where total costs have exceeded what was expected (forecasted). Or you might want to highlight approved contracts that exceed \$500,000 or are valued at less than \$50,000, which lets you visually identify the approved contracts with high or low (or both) values.

When creating conditions, be aware of the following:

- You can only apply conditions to columns and fields that you have permission to access. Hidden, restricted, and deleted columns are *not* shown. If a column becomes available after you create a view and set up conditional formatting, you must update the view to add the previously restricted or hidden column.
- If a column that you can view when you create a condition subsequently becomes hidden or restricted, or is deleted, the system automatically updates the information shown to you when you select the view or its settings. Similarly, if the column becomes visible to you again because it is no longer hidden or restricted, the system automatically updates your customized view and settings. However, if you update and the customized settings *before* the column display is reinstated, the system permanently removes the applicable column from the customized view; you must manually update the view to add it.
- If multiple conditions of a column are true, the conditions are applied in the order in which you created and applied them; that is, the condition that you specified first is applied first, and so on.
- If none of the conditions are met, the display of the Cost Sheet remains unchanged; no message is displayed that indicates no conditions were met.
- If you intend to print the Cost Sheet or export it to Microsoft Excel:
 - You must enable support for background graphics in your browser before printing the sheet.
 - Formatting is not retained during an export to Microsoft Excel, so viewing the conditions in Excel is not supported.

To create a condition:

1. Select **+ Add Column**.
2. Select a **Column**.
The list contains all columns available to you in the Default view. Hidden, restricted, and deleted columns are *not* shown. Conditional Formatting is applied to the selected column.
3. Select a **Format Type**.
4. Select **Add Format Condition** (the plus [+] sign) to specify the elements for which you want to use different formatting.
5. Do the following:
 - a. Choose a **Data Element**. This list contains all columns available to you in the Default view. Restricted and hidden columns are not listed. The validation process to determine whether the condition is met is processed on the selected column.
 - b. Choose a **Condition**. The conditions listed are based on the type of data element (DE) selected. See [Condition options](#).
 - c. Choose a **Value**. Depending on the type of DE, choose a value that the query condition must meet. If you chose a **Condition** such as **is empty**, the **Value** field does not apply.
 - d. Choose a **Format**. The options in this list depend on the selected **Format Type**.

- If you chose **Background Fill & Color** or **Font Color**, select the applicable color. The listed colors are the only options available; they cannot be customized for use.
- If you chose **Data Bar**, Format displays a read-only Data Bar selection. Data Bar assumes that the associated Column contains numeric values, including negative values. A Data Bar is not displayed for summary records or totals. After the Conditional Format is applied, the selected Column is replaced with data bars whose length is proportional to the percentage value with regard to the maximum value. The values are printed inside their respective bars. Negative values are represented by red bars.
- If you chose **Icon Set**, Format displays a read-only Icon Set selection that uses a fixed representation. Positive values are reflected by a green Up Arrow, negative values by a red Down Arrow, and zero values by a yellow Horizontal Arrow.

Note

Because you can create multiple conditions for the same column, conditions are applied in the order in which you create them; after the first condition is satisfied, the remaining conditions are ignored.

6. To add additional columns, select **Add Column** again, and repeat the preceding steps.

Condition Options

The following is a list of the available **Condition** options that you can use in the **Filters** tab and the **Conditional Formatting** tab:

- contains
- does not contain
- equals
- does not equal
- is empty
- is not empty

White spaces (blank characters):

- **Filters tab:** All leading and trailing white spaces (blank characters) are included in the condition; that is, they are *not* trimmed.
- **Conditional Formatting tab:** When you use any of these options on the Conditional Formatting tab, all leading and trailing white spaces are excluded; that is, they *are* trimmed.

Case sensitivity: When you use **equals** or **does not equal**, the results *are* case sensitive.

Managing Cost Sheet Views

All shared views in a cost sheet that are set to Visible are displayed to those who have the applicable permissions when they access a cost sheet that uses the template. If you update, hide (clear the **Visible** checkbox), or delete a view, these changes are automatically applied to the corresponding cost sheet.

Note

When you import cost sheet views through a configuration package, they are hidden (the **Visible** checkbox is deselected) if the destination contains the same shell template and cost sheet. If the destination environment does not have the same shell template, the views are imported and visible when the cost sheet is created in the destination.

To update a Cost Sheet View for a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. In the **Projects Templates** log, select and open the applicable project.
4. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
5. In the **Cost Sheet** log, select and open the applicable cost sheet.
6. From the **View** menu, select **Manage Views**.
7. Use the **Manage Views** dialog box to:
 - Change the order of the views in the **View** menu for the projects/shells.
 - Make a view visible or hide it.
 - Delete a view.

The current Active View is marked with a green check mark.

8. To save your changes, select **Save**.

Project or Shell Cost Sheet Column Data Sources

Data Source	Description
Single Sources	Columns in which data is manually rolled up from business processes after the appropriate terminal status is reached. Can also include other specified sources.
Cost-type Business Processes	Included in the Single Sources list are all Cost BPs that are available for your project/shell, and all their terminal statuses.
AFC	
Assigned Budget	This column is closely related to budget distribution. It allows the user to create specific, detailed line-items for each CBS code in the budget. Each line item can be assigned individually.
Funded Records	This column shows records in which the CBS code is funded, that is, spend-type business process records that consume funds.
Unfunded Records	This corresponds to spend-type BP records that are not funded.
Prior Forecasts	Prior forecasts

Data Source	Description
Yet To Buy	Part of the commitment that still must be purchased. For example, a base contract is for 1000 items, and 500 have been bought. There are 500 items "yet to buy." It is based on a currency amount. In Cost Sheet Properties, setting "Auto" "Transaction" options will track the yet to buy information.
Logical Sources	These values are based on formulas or user-defined entries.
Budget Remaining Balance	This is a place holder for a formula you create (optional).
Budget Variance	This is a place holder for a formula you create (optional).
Commits	This is a place holder for a formula you create (include all commit columns; optional).
Forecasts	This is a place holder for a formula you create (optional).
Forecasts (Unaccepted)	This is a place holder for a formula you create (optional).
Forecasts Variance	This is a place holder for a formula you create (optional).
CBS Funding	Requires additional setting in Funding Sheet; see Setting Up the Funding Manager .
Manual Funding by CBS	Requires additional setting in Funding Sheet; see Setting Up the Funding Manager .
Revised Budget	This is a place holder for a formula you create (optional)
Spends	This is a place holder for a formula you create (include all spend columns; optional).
Project or shell Cost 1-25	These can be used to roll up manual and formula columns to company cost sheets. Each data source can be used for one column.

Adding Cost Rows (CBS Codes)

The following procedures are applicable to Cost Templates and Cost Sheets

Each cost sheet row corresponds to the unique CBS (or Cost) codes that link costs on a project/shell to the General Ledger for Finance. They may be added manually or imported from a CSV file.

CBS codes may consist of one or a maximum of 10 segments. Each segment is defined by a different data definition. For example, a five segment CBS Code would require five data definitions. Segments can be defined via a selection list or text entry.

If the cost sheet has been set up to automatically sort CBS codes, all new rows will be sorted by ascending order.

You cannot create duplicate CBS Codes at the same row level on the sheet. If you choose a Flat structure for your cost sheet (no indented rows), you will not be allowed to create duplicate CBS Codes. If you choose a Tree structure, you can use the same CBS Code if each instance is within a different grouping (or parent) row.

To manually add rows to a cost sheet or cost template:

1. Open the Cost Template or Cost Sheet.
2. Select **Manage Rows**. The Manage Rows window opens.
3. Select **Add**. The CBS Detail window opens.
4. Select to edit all required fields in the row.
5. Select **Save** when finished.

To rearrange rows:

1. Open the Manage Rows window.
2. Select and drag a row to move it to another position.

About the CBS Detail Window

Following is an overview of the fields and tabs in the CBS Detail window.

The CBS Detail window displays CBS properties. You can add notes or file attachments to the CBS code in this window. You can also specify CBS Breakdowns in this window, which are used in Schedule of Values (SOV) sheets.

The values that are available in the CBS code selection come from the Cost Codes data definitions. To view the list of Cost Code Data Definitions:

1. Go to the **Company Workspace** tab, and switch to Admin mode.
2. In the left Navigator, select **Data Structure Setup**, select **Data Definitions**, and then select **Cost Codes**.

The log will show whether the code is a **Text Box** or **Pull-down Menu**.

The codes listed in the log are those that are available to use when building the CBS Code segments.

This section discusses the default CBS Detail window. If your company has designed a uDesigner-created Cost Attribute Form, the fields may differ. Fields with a red asterisk are required.

In this field:	Do this:
CBS Code	Click Select to choose the cost code segments for the CBS code. The Cost Code Selection window opens.
CBS Item	Enter a label that will display on the cost sheet next to the CBS Code, this can help other users to identify what the code represents.
Description	Enter an optional description to describe the row.
Status	Select the status of the cost code. Choices include: Active, Inactive. The status of the cost codes persist when cost sheets are updated using templates.

Additional information about the CBS Detail window:

- The appearance of the Cost Code Selection window will depend on how your cost sheet was set up, which CBS Codes (cost codes) were used in the definition, and how each code was set up.

- If the CBS code segment has a **Select** button, select it, and choose the segment values from the list.
- If the CBS code segment does not have a **Select** button, type the value of the segment into the field.

Create a Summary Row (Classic view)

If you select a Tree Structure format, you can indent rows. These indented rows can be used to capture cost transactions. The parent node acts as a summary row, summarizing the information present for each of the indented "child" rows. You cannot enter information directly into a summary row.

To create a summary row by indenting:

1. In the **Rows** window, select the checkbox of the row(s) to indent under the summary row.
2. Select **Indent**. The row immediately above will become a summary row. All monetary values in the detail lines below a summary row will be rolled up to the summary row automatically.

To outdent a row:

1. In the **Rows** window, select an indented row by selecting its checkbox.
2. Select **Outdent**. The row will no longer be part of the summary row.

Import Cost Rows (CBS Codes)

You can create CBS Codes in a cost sheet by importing them from a CSV file. This procedure can also be used to copy the CBS codes from one cost sheet or template to another (the structure and code segments must be the same).

Step 1: Export the file template

Open the cost sheet or template, open the **Menu Options**, select **Export**, and select **CBS Details**.

Depending on your browser, the CSV file will be automatically downloaded, or you will be prompted to download the file manually.

Step 2: Add the CBS code rows to the CSV file

1. Navigate to and open the CSV file (in Microsoft Excel or another compatible program). If the Cost Template already contains rows, they will be listed. If summary rows exist, the CBS column will display them with two tilde symbols (~) separating the parent row from the child row.

For example: 2000000 ~210000, where 2000000 is the parent and 210000 is the child.

2. Enter information in the required fields and save the file.

Note

Do not change or delete any of the listed CBS Codes that exist in the system or you will get an error. Changes to the CBS Code must be done within the system.

Required fields:

- **CBS Code:** must be a match to a CBS Code in the Cost Sheet
- **CBS Item:** must be a match to the CBS Item for the associated CBS Code in the Cost Sheet
- **Cost Type:** Capital or Expense
- **Status:** Active or Inactive

Step 3: Import the rows

1. In the cost sheet or template, open the **Menu Options**, select **Import**, and select **CBS Details**.
2. In the Upload window, browse to and add the CSV file.
3. Select **Open**. After the import, your Cost Sheet will show the new rows.

To copy CBS codes from one cost sheet or template to another:

1. In the source cost sheet or template, select **Export**, and then select **CBS Details**. Save the CSV files. You can go in to the file and add additional codes if needed.
2. In the destination cost sheet or template, select **Import**, and then select **CBS Details**. Browse to the CSV file and import.

Note

The structure of the two sheets must be the same: Both must be tree or flat structure. Verify the structures by opening the Properties window and selecting the Structure tab. Be sure you are using the same CBS code segments.

Creating Worksheet Templates

Worksheets are extensions of the cost sheet. They can be used as "sub-cost sheets," enabling specific calculations or data entry in a separate sheet, which can then be rolled up into a defined project/shell cost sheet column. For example, a worksheet can be used to off-load complex calculations, which can be rolled up into a single cost sheet column. The rows equal the CBS codes on the cost sheet. Worksheets can have multiple columns for data entry or formula calculations, but do not support data rolled up from business processes.

A cost sheet column can be associated with a worksheet as the data entry method. A worksheet column can also be associated with another worksheet, if there is not a circular reference. There can be multiple worksheets in a project/shell.

Note

A circular reference is referred to a reference in which the last field references the first field and creates a closed loop.

A worksheet template can be created in Admin mode. Permissions can be controlled for individual worksheets. Worksheets are not independently reportable; however, cost sheet columns that reference worksheets can be reported on.

Create a Worksheet Template

You can use this template to create worksheets for individual project/shell cost sheets, or for cost sheets in project/shell templates.

Worksheets are created similarly to cost sheets. The user who creates a worksheet will be the owner of the Worksheet. The owner can grant permissions to other users and groups in User mode.

To create a worksheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets**. The Cost Templates log opens.
3. Select **Create**, and choose **Worksheet**. The Worksheet Properties window opens.
4. Complete the Worksheet Properties window:
 - **Name:** Enter a unique title to identify the worksheet or template. This is a required field.
 - **Description:** Enter an optional description. This is especially useful if you plan to create multiple templates for use in different projects/shells, or multiple worksheets for a project/shell.
5. Select **Save** to save and exit the window. The worksheet template is listed in the log.

You can open the worksheet template and configure it by adding columns; the rows will be the CBS codes within the corresponding cost sheet.

Open the Worksheet Template

After creating the worksheet template, you must open the sheet to add columns.

To open the worksheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets**.
3. Select the worksheet template, and select **Open** from the *gear menu* (⚙️). The worksheet template window opens.

Create a Worksheet Column

Adding a column to a worksheet is similar to adding a column to the cost sheet. You can add manual entry (direct or line item) columns or formula columns. You can also add columns that reference other worksheets. This allows interaction between worksheets.

The available data sources are Project Worksheet Cost 1 through 50.

To add a column:

1. Open the worksheet, and select **Add Column**. The New Column window opens.
2. Complete the Column Properties as usual for a column.
If you are creating a formula, the data sources that are available for the formula are limited to the other columns on the worksheet.

3. Complete the window, and select **Save** or **Save & Add New**.

Create a Worksheet in a Shell Template

You can create a worksheet in the project/shell template Cost Manager by copying from a template or copying from a project/shell.

To create a worksheet from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
4. From the toolbar, select **Create**, select **Worksheet**, and then select **From Template**. This option lets you create a worksheet by copying one from a company-level template.
5. In the **Create Worksheet Template** dialog box, select a worksheet template, and select **Save**.

To create a worksheet from another project/shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
4. From the toolbar, select **Create**, select **Worksheet**, and then select **From Projects**.
5. In the **Create Worksheet from Project** dialog box, click **Select**.
The Worksheets dialog box lists worksheets from all projects/shells.
6. Select any Cost Sheet, click **Select**, and then select **Save** to create a Cost Sheet.

Delete a Worksheet

User will not be allowed to delete a Worksheet if it is referred as a Column Entry method in Cost Sheet. Only owner of Worksheet will be allowed to delete Worksheet along with user with Create permission at module level.

To delete a worksheet:

Select the worksheet in the log, and select **Delete** from the *gear menu* (⚙).

Managing Cost Templates

You can edit the cost template properties, rows, columns, or add default data to rows.

Note

Your edits to a template will be reflected in cost sheets that are created from it, but will not affect exiting cost sheets.

To access your cost templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log that lists the cost templates.

The **Cost Templates** log has the following toolbar options:

Option	Description
Create	To let you create: • Cost Sheet • Worksheet
View	To change the view of the cost sheet to the following options: • All • Group by Type
Delete	To delete a cost template.
Refresh	To refresh the items listed on the page.
Print	To print the list of cost templates with the following options: • Print • Export To CSV • Export To Excel
Find on Page	To search for an item on the page.

The **Cost Templates** log has the following tabs on the right pane:

Tab	Description
Properties	To view or edit the fields of your cost template.
Audit Log	To review the history of changes that have been incorporated on a selected cost template.

View or Edit Cost Template Properties

The **Properties** tab of a cost template is fully editable. This lets you make changes as necessary to use when creating subsequent cost sheets from the template.

Note

- Many of the properties that are editable in cost templates are not editable in the Properties tab of the cost sheet itself, after it has been created in the project/shell or in a project/shell template.
- Any edits that you make to a cost template will affect new project/shell cost sheets created from the template, and the existing cost sheets will not be affected.

To view or edit cost template properties:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
3. Select a cost template from the log. The **Properties** tab is displayed on the right pane. The **Properties** tab has the following blocks with fields that let you enter values, when permitted:
 - **General**
 - Name
 - Description
 - CBS Code Label
 - CBS Item Label
 - **Structure**
 - Flat
 - Tree
 - Sort CBS
 - Segment Preview
 - **Options**
 - Forecast Details: User Line Items - Transactions
 - Forecast Inclusion: Manual - Auto
 - Enable Cost Sheet Forecasting
 - Enable P6 source
4. In the **Properties** tab, you can make edits as necessary.

Note

Any edits that you make to a cost template will affect new project/shell cost sheets created from the template, and the existing cost sheets will not be affected.

5. When finished, select **Save** to save your changes. Select **Cancel** to discard your changes.

Delete a Cost Template

You can delete a cost template from the **Cost Templates** log.

Note

The cost sheets in project/shell templates or in projects/shells cannot be deleted. Deleting a template will have no effect on cost sheets created from it.

To delete a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.

3. Select a cost template from the log.
4. Select the *gear menu* () next to the cost template, and select **Delete**.

Edit Cost Templates Log Columns

You can edit the properties of a column, including the entry method, if this is applicable for the selected data source.

Note

Although it is possible to change the entry method for a column, use caution when doing so when data exists in the column. Information such as detailed line item entries could be lost. For example, if you change the data entry method from line item entry to direct entry, the value will appear in the cell, but all line item details will be lost.

To edit Cost Templates log columns:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Cost Sheets** to open the **Cost Templates** log.
3. Right-click a column heading, and select:
 - **Sort Ascending**
 - **Sort Descending**
 - **Columns (Name, Date Created, Created By, Type)**
 - **Lock after this Column**
4. Select a cost template from the log.
5. Select the *gear menu* () next to the cost template, and select **Open**. The **Cost Sheet** <name> window opens.

You can delete a cost template from the **Cost Templates** log.

Note

The cost sheets in project/shell templates or in projects/shells cannot be deleted. Deleting a template will have no effect on cost sheets created from it.

Move a Column (Project Cost Sheet)

To move a column of a project cost sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.

4. Open the Project Cost Sheet.
5. In the list of columns, select and drag a column header to a different spot in the log. A blue line will appear where the column will be placed.

Delete a Column (Project Cost Sheet)

If a column is being used in a formula in another column, you must remove the column from the formula before you can delete it. If the column contains a cell with line item data, you must first remove each line item before it can be deleted.

To delete a column:

1. Right-click a column header from the log.
2. Select **Delete** and **Yes** to confirm.

Hide Cost Sheet Columns (Project Cost Sheet)

You can hide a cost sheet column. Hidden columns are not visible on the cost sheet, but otherwise function like other cost columns. For example, you might want to hide a column that is used in a formula column, but is unnecessary to display. Hidden columns can be viewed from the Columns Log by users with "create" permission on the cost sheet.

To hide a cost sheet column:

1. Right-click a column header from the log.
2. Select **Hide**. The column is hidden.

To show (unhide) a hidden cost sheet column:

1. In the cost sheet template, select **Menu Options** (), select **Columns**, and then select **Unhide**.
The columns are listed in alphabetical order. If there are more than 25 items, the submenu uses a fisheye menu, which lets you move through the list and read the focused items more easily.
2. Select the column to unhide.

Edit a Cost Row

You can edit rows in templates and cost sheets. However, in cost sheets, if you have already distributed and locked the budget, you must unlock it first before you can access the Rows window and edit rows.

To edit a row:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Cost Sheets**.
3. Open the cost sheet. The Cost Sheet - [name] window opens.
4. From the toolbar, select **Manage Rows**  to open the **Manage Rows** window. In the **Manage Rows** window, you can use the **Add** option to add a row, select a row, and delete it.

For the Project Cost Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
4. Open the cost sheet. The Cost Sheet - [name] window opens.
5. From the toolbar, select **Manage Rows**  to open the **Manage Rows** window. In the **Manage Rows** window, you can use the **Add** option to add a row, select a row, and delete it.

View or Edit CBS Details

The CBS Detail window displays CBS properties. Notes and files can be attached to transactions via the CBS Detail window. You can also specify CBS Breakdowns in the CBS Detail window, which are used in SOV sheets.

Note

If you have locked the budget, you will need to unlock it first to access the Rows window or CBS Detail window.

To view and edit CBS Details:

1. Open the Cost Sheet.
2. From the cost sheet, select **Manage Rows** to open the Manage Rows window. Modify the values of the editable fields for each row as needed.
3. Select the **CBS Code** to be edited, which appears as a link. The right pane opens to display the **Breakdown** and **Audit Log** tabs.
4. Make changes to the **Breakdown** Tab as necessary.
5. Select **Save**.

Creating a Project or Shell Cost Sheet

The Cost Sheet is created by copying from a cost template or another project/shell cost sheet. Only one project/shell cost sheet may be defined per project/shell. You may define multiple work packages or work sheets.

If a worksheet is associated with the cost sheet or template (that is, if a cost sheet column definition refers to Worksheet as Data Entry method), the worksheet will also be copied.

Note

After a cost sheet has been created, it cannot be deleted. Be sure the structure (tree or flat) of the template is what you want to use for the cost sheet. The structure is not editable for cost sheets. You can add, modify or delete columns and rows to the sheet as necessary.

To create a cost sheet by copying a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. Open the project template.
4. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
5. From the toolbar, select **Create**, select **Worksheet**, and select **From Template**. This option will allow the user to create a Cost Sheet by copying one from a company level template.
6. Select a template, and select **Save**.

To create a cost sheet by copying from another project/shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
3. Open the project template.
4. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
5. From the toolbar, select **Create**, select **Worksheet**, and select **From Project**. This option will allow the user to create a Cost Sheet by copying one from another project/shell.
6. Select a worksheet, and select **Save**.

Add Cost Sheet Columns and Rows

Rows and columns are added to project/shell cost sheet the same way as they are to cost sheet templates.

Add CBS Breakdown

Breakdowns are used in SOV sheets. Invoices can be created from SOVs that can include CBS breakdowns. The breakdowns are not accessible in any BP except Spends BPs, and are not associated with data definitions, and so are not reportable.

The breakdown applies to a single project/shell, and can be applied across projects/shells by adding CBS code rows and breakdowns to Cost templates, or creating cost sheets from previous project/shell cost sheets with breakdowns.

You may add as many breakdowns as you need. When you select **OK**, the system will perform a validation check. If the CBS code is already in use in a cost sheet transaction, the system will not allow the addition of a breakdown.

Note

If you have locked the budget, you will need to unlock it first to access the Rows window.

You can also add breakdowns directly to SOV sheet. This is done in User mode on the SOV sheet.

To add a CBS Breakdown:

1. From the Cost Sheet, select **Manage Rows**. The Rows window opens.
2. Select the **CBS Code** to be edited, which appears as a link. The right pane opens to display the **Breakdown** and **Audit Log** tabs.

Note

The **Breakdown** tab becomes accessible after the row has been created. To see the **Breakdown** tab, you must first create the CBS Code and select **Save**.

3. Select **Add Breakdown**.
4. Add a Breakdown **Name** and **Description**, and select **Save**.

Modify cost sheet default view

The cost sheet default view refers to how the cost sheet appears when it is first opened. The cost sheet Properties window offers two options regarding the cost sheet default view, described in the procedure below. These options control how the cost sheet opens for all users.

To modify the cost sheet default view:

1. In **User mode**, open the cost sheet Properties window (select **Properties** from the log toolbar, or open the cost sheet and select **File**, and then select **Properties**).
2. On the General tab, you may optionally choose either or both of the **Default View** checkbox options:
 - **Open in maximized view**: When the cost sheet is opened, it will automatically open maximized, or full-screen.
 - **Open in split mode**: When the cost sheet is opened, it will automatically open as split (same as selecting **Split**).

If these options are not selected, the cost sheet will open by default to a size slightly smaller than the screen, and not split.

Setting Up the Company Cost Sheet

The company cost sheet can be set up to roll up project/shell cost data across all company projects/shells.

Create a Company Cost Sheet

Company cost sheet will not be auto-created. The company administrator must create one. Cost sheets are added by default.

To create a company cost sheet:

1. Go to the **Company Workspace** tab, and switch to **User mode**.
2. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**. The Cost Sheet log opens.
3. Select **Create**. After a cost sheet has been created it cannot be deleted.

Add Company Cost Sheet Columns

Cost sheet columns can be added to company cost sheets the way they are added to cost templates. Predefined data sources at project/shell (CBS) level will roll up to company level automatically.

Company Cost Sheet Data Sources

Data Source	Description
Single Sources	Data from single data sources Project Cost1 to Project Cost25 is rolled up from project-level cost sheets. Users can also view data sources based on business process data rolled up from the project level.
Business Process (All statuses)	Included in the Single Sources list are all Cost BPs that are available for your project, and all their terminal statuses.
AFC	Allowance for Change. This is a contingency value.
Funded Records	This column shows records in which the CBS code is funded, that is, spend-type business process records that consume funds.
Unfunded Records	This corresponds to spend-type BP records that are not funded.
Prior Forecasts	Prior forecasts
Yet To Buy	This is a portion of a commit that you still need to buy. This can be automated for uDesigner BPs (commit BPs can track YTB). In Cost Properties, you must set "Auto" "Transaction" options, which track YTB.
Project Cost 1 to Project Cost 25	Roll up from all projects
All Project Single Sources	All other data sources are similar to Project Cost Sheet.
Logical Sources	These sources are formulas.
Company Budget Remaining Balance	This is a place holder for a formula you create (optional).
Company Budget Variance	This is a place holder for a formula you create (optional).
Company Commits	Can be used for company commit BPs
Company Forecasts	This is a place holder for a formula you create (optional).
Company Forecasts (Unaccepted)	This is a place holder for a formula you create (optional).
Company Forecasts Variance	This is a place holder for a formula you create (optional).
Company Funding	You can roll up all project funding here.
Company Spends	You can roll up spends BPs here.
Company CBS Funding	This requires additional setting in Funding Sheet; see Setting Up the Funding Manager .
Company Manual Funding by CBS	
Company Cost 1-25	

Map cost sheet column to an account code

You can define mapping between a company cost sheet column and a company account code. This allows you to link an account code with project/shell cost data that is rolled up from a project/shell cost sheet into the cost sheet.

Note

- You can map a cost column to more than one account code. For example, Column A can be mapped to both Account Code X and Account Code Y. This means that the Total will display for both account codes in that column. However, each account code can be mapped only once (Account Codes X and Y cannot be mapped to any other columns).
- If you remove a column from the asset sheet that is associated with an account code, the mapping will be lost.

To map a cost sheet column to an account code:

1. In **User** mode, navigate to the company cost sheet.
2. Open the Properties window, and select the **Options** tab.
3. Select **Add**. The Add Mapping window opens.
4. Complete the window:
 - **Column Name:** Company Cost Sheet Column drop-down will show list of all columns that are defined on the cost sheet.
 - **Account Code:** Click Select. A picker window opens displaying active codes from the accounts sheet. Select a code, and select Open.
 - **Account Name:** This field is populated with the name of the account code chosen in the previous field, as defined in the accounts sheet.
5. Select **OK** to save the Add Mapping window.
6. Select **Add** to add additional mapping if necessary.
7. Select **OK** to save and exit the Properties window.

After mapping is complete, data from the company cost sheet (which reflects data rolled up from project/shell cost sheets) will be rolled up to the Accounts Sheet under the Projects data source. Only the total value will be rolled up. If the Total value in the cost sheet column changes, the change is reflected on the accounts sheet.

Note

The process used to update the accounts sheet with mapped cost sheet data runs in the background. After mapping a cost column to the accounts sheet, or updating the cost sheet data, the change may not reflect in the accounts sheet immediately.

To modify mapping:

In the Properties window, Options tab, select a mapping, and select Modify. You can make changes in the Add Mapping window.

To remove mapping:

In the Properties window, Options tab, select a mapping, and select Remove. This removes the mapping. Data will no longer roll up to the accounts sheet.

Deleting Cost Sheets

This section describes how to manually delete a cost sheet from a shell.

① Note

You can delete a cost sheet from a specific shell template but not from other Projects/ Shells that have been created using the template.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.
4. Select a sheet for deletion.
5. Select **Delete**.
6. When the prompt appears that asks you to confirm deletion, select **Yes** to delete the cost sheet.

Setting Up a Company Accounts Sheet

The company accounts sheet is used to track company level accounts information, such as assets, resources, and facility maintenance. It is similar to a project/shell cost sheet, using account codes instead of CBS codes.

Account codes are independent of CBS codes, but are similar in structure format. Company level business processes can be designed in uDesigner to roll up to the accounts sheet (line items are associated with account codes).

How to set up a company accounts sheet

Before you begin: A Company Account Code Attribute Form must be deployed in uDesigner. This is used as the detail form for creating account codes (rows) on the accounts sheet. There is no default form available. The design also includes creating an account code picker, which can be used on BP forms used with the accounts sheet, and for mapping account codes to project/shell cost sheet columns.

Step 1: Deploy the Company Account Code Attribute Form in uDesigner, similar to other design deployment in uDesigner.

Step 2: Grant Accounts Sheet permissions.

Step 3: Create a company level accounts sheet. There is one accounts sheet per company. There is no template for an accounts sheet. After creation, you add columns and rows. The columns can be formulas, they can roll up data from company cost (accounts) business processes, or they can roll up asset data, project/shell cost data, or resource data. Adding rows to the accounts sheet creates the account codes that are used. You need to activate the account codes after adding the rows.

Optional steps: To roll up transactions to the accounts sheet, you must create and set up company-level cost business processes (also known as an account type business process). These BPs use account codes rather than the CBS codes used in project/shell level cost BPs. These are discussed in the Business Process sections. Other options assume that you have configured and set up an Assets Sheet (for rolling up asset data).

Import Company Account Code Attributes Form

To import Company Account Code Attributes form, see [Importing Configuration Packages](#).

Create a Company Accounts Sheet

You can create an accounts sheet to create company account codes and capture and view company level cost.

To create an accounts sheet:

1. Go to the **Company Workspace** tab, and switch to **User** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Accounts Sheet**. The Accounts Sheet log opens. You can have one accounts sheet per company.
3. Select **New**. The Properties window opens.
4. Complete the **General** tab.
 - **Title:** This will be displayed in the log
 - **Description:** Enter an optional description
 - **Display Mode:** Choose Flat or Tree. Account codes are segmented, similar to CBS Codes. You can switch between Flat or Tree at any time. The same data is displayed in Tree or Flat structure.
 - **Default View:** You may choose either or both of the **Default View** checkbox options:
 - **Open in maximized view:** When the sheet is opened, it will automatically open maximized, or full-screen
 - **Open in split mode:** When the sheet is opened, it will automatically open as split (same as selecting **Split**)

If these options are not selected, the accounts sheet will open by default to a size slightly smaller than the screen, and not split. The window can be resized by selecting the Minimize or Maximize/Restore buttons in the upper-right corner of the window, or by dragging the edges of the window to the size that you need.

5. Select **OK**. The new accounts sheet appears in the log.

To open the company accounts sheet:

1. Go to the **Company Workspace** tab, and switch to **User** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Accounts Sheet**.

3. Select the accounts sheet in the log, and select **Open**. The Accounts Sheet opens. You can do the following:
 - Add rows (account codes) or columns.
 - Split the screen vertically, which is useful for viewing columns or entering data while keeping the account codes in view (select **Split**).
 - Check the Account Status.
 - Import Account Codes or Column Details.

Add a Column to an Accounts Sheet

You can add as many columns as necessary to the accounts sheet. There are two default columns: **Company Account Code** and **Company Account Name**. You can add columns for formulas, for transaction data from company level cost business processes (account type), or to roll up data from project/shell cost sheets, or resource actuals.

To add a column:

1. Open the accounts sheet.
2. Select **Columns**. The Columns log opens.
3. Select **New**. The Column Properties window opens.
4. Complete the columns log as described in the following table.
5. Select **OK**.

In this field:	Do this:
Name	The name is populated with the data source
Data Source	Select the drop-down, and choose the data source for the column. Options include: Single Sources: • Company account type BPs, listed by name and status. These are company level cost BPs of subtype line items with accounts code. • Projects/Shells (CBS): Data is rolled up from project/shell cost sheets into the company cost sheet, based on the mapping of cost sheet columns and account code. • Resource Actuals: Data is rolled up from company-level timesheet records. Logical Sources: • Accounts Code 1 through 25. You can use these to create a formula or manual entry column. These are reportable.
Entry Method	Select one of the options (options available are dependent on the data source; applicable when a Logical data source is selected): • Manual: User enters data directly into an accounts sheet cell • Formula: Can create a formula from other accounts sheet columns
Data Format	Choose Currency (base currency) or Percentage (%)
Display Mode	Show or Hide the column from user view

In this field:	Do this:
Column Position After	Select the column after which you want the current column to appear

To roll up project/shell cost sheet data to the accounts sheet:

1. Be sure the project/shell cost sheet data rolls up to a company cost sheet column, using a data source Project/Shell Cost 1 through 25 for the cost sheet column.
2. Map the company cost column to an account code. (In the company cost sheet Properties window, Options tab. See [Map cost sheet column to an account code.](#))
3. Roll up the mapped company cost column data to the accounts sheet column, choosing **Projects/Shell** data source. The column will show the Total of the company cost column.

As project/shell level transactions take place, the company cost column will reflect the changes, which in turn will roll up to the accounts sheet.

Adding and Managing Accounts Sheet Rows

Regardless of the order you add or import rows, they are automatically sorted alphanumerically by account code.

Add Rows to the Accounts Sheet

You can add account codes to the accounts sheet manually or by importing.

To add a row to the accounts sheet manually:

1. Open the Accounts Sheet.
2. Select **Add Row**.
3. Complete the **Account Code Details** form. This is the attribute form and will vary based on your company's design. Account codes are built like CBS codes, from segments that can be text fields or pulldown menus.
4. Select **OK**.

Delete Accounts Sheet Rows

You cannot delete a row if it contains line item or rolled-up data, or if the code is mapped to a cost or asset sheet column.

To delete rows from the accounts sheet:

1. Open the accounts sheet.
2. If you are using a tree structure, select the plus (+) next to segment rows (shaded blue) to view account code rows.
3. Select a checkbox next to the account code to be deleted.
4. Select **Delete Rows**.
5. Select **Yes** to confirm.

Import Account Sheet Rows

Step 1: Export template

1. Open the accounts sheet.
2. Select **Export**, and choose **Account Codes**.
3. In the File Download window, select **Save**.
4. Enter a file name, browse to where you want to save the file, and select **Save**.

Step 2: Edit Template in Excel

1. Open the CSV file you just exported.
2. If the accounts sheet already contains rows, they will be listed. Note the format and structure.
3. Delete any existing rows.
4. Enter new account codes into the columns, and save the file.

Step 3: Import the CSV file

1. On the Account Sheet toolbar, select **Import**, and choose **Account Codes**.
2. In the **Upload** window, browse to and add the CSV file.
3. Select **OK**. After the import, the accounts sheet will show the new rows. Rows are sorted alphabetically by account code (adjusts for tree or flat structure).

Activate an Account Code

If an account code is inactive it should still be displayed on accounts sheet but should not be available through an account code picker.

To activate or deactivate an account code:

1. Open the Accounts Sheet.
2. Select **Account Status**. The Account Code Status window opens.
3. Select one or more account codes, and select **Activate** or **Deactivate**.

Modify Accounts Sheet Default View

The accounts sheet Properties window offers two options regarding how the sheet will appear when it is first opened. These options control how the sheet opens for all users.

To modify the accounts sheet default view:

1. Open the accounts sheet Properties window (select the sheet, and select **Properties** from the log toolbar).
2. On the **General** tab, choose either or both of the **Default View** checkbox options:
 - **Open in maximized view:** when the accounts sheet is opened, it will automatically open maximized, or full-screen
 - **Open in split mode:** when the sheet is opened, it will automatically open as split (same as selecting **Split**)

If these options are not selected, the accounts sheet will open by default to a size slightly smaller than the screen, and not split.

Setting Up the Funding Manager

The Funding Manager helps you to keep track of where project or shell funding comes from and how it is being spent. The Funding Manager is available in CBS shells. Use the Project or Shell Funding sheet to specify the appropriation and assignment of funds from each funding source. You can automate fund appropriation and assignment when used with cost business processes.

Sometimes, it may be necessary to allocate specific funds to use on a particular contract, and have a means to control consumption on the invoices created against that contract. This can be done through commitment-level funding. A commitment funding sheet is created for each base commit that has been designed for commitment funding. You allocate funds from the project or shell funding sheet to the commitment funding sheet. This sheet works in conjunction with the Schedule of Values (SOV) sheet to track base commit and change commit line items and balances.

Company Funding Sheet vs. Project or Shell Funding Sheets vs. Commitment Funding Sheets

The first step to setting up funding is to create and set up a company funding sheet, where individual funding sources are maintained.

For example, a corporation's funding sources may include different types of corporate accounts. For municipal or educational facilities, funds may come from bond measures, grants, donations or other sources. All these funding sources will be listed and tracked on the company funding sheet. As funds are consumed via business processes or manually in individual projects/shells, this data is rolled up to the company funding sheet.

Project/shell funding sheets track how your company's funding is being spent on each project/shell. It tracks individual transactions, which are rolled up to the company funding sheet. All project/shell funding sheets must be created based on a funding template.

If you are using commitment funding, you will start with a commitment funding template, which is used to create the commitment funding structure within a project or shell. As base commits (that are designed for commitment funding in uDesigner) are routed and approved, a commitment funding sheet is created, based on this structure, for each base commit record. This sheet works with the SOV sheet to track and control funding of each SOV line.

How to set up the Funding Manager

The following is an overview of the steps needed to set up funding for use in projects/shells, plus the steps needed to set up the optional commitment level funding. Details for each step are in the sections that follow, unless otherwise noted.

Setting up company and project/shell funding

Before you begin. The fund attribute form can be designed in uDesigner. This will be used as the Fund Details window when adding new funds to the company funding sheet, or viewing fund properties. If your company does not design a fund attribute form, a simple default form is used.

Import and set up fund business processes. You can use business processes for fund allocations, fund assignment (also known as consumption; enabled on spends type business

processes), and fund credits (also enabled on spends business processes). This step can be done at any point in this general procedure. Be sure you know which funding business processes you will be using for the project/shell before defining funding rules on the project/shell funding sheet.

Step 1: Import and deploy the fund attribute form. Once imported, the fund attribute form becomes the Fund Details window, used to create and manage fund codes in the company funding sheet. When designing the form, you can also design the fund picker, which is used to add funds to business processes and project/shell funding sheets, as well as "Find" on the picker. This is an optional step. If you do not create a fund attribute form, a default fund code form and fund picker will be used.

Step 2: Create and set up the Company Funding Sheet (User mode). You define the funds in the company funding sheet, which can then be used for funding projects/shells. Only one company-level funding may be created per company. All project/shell funding sheets refer to the company funding sheet.

Step 3: Create and set up Project/Shell Funding Template (Admin mode). The funding template is used to create project/shell funding sheets.

Step 4: Create and set up the Project/Shell Funding Sheet (User mode). The project/shell funding sheet is based on the funding template. (You can also define the project/shell funding sheet in a project/shell template.) The funding sources available for the project/shell are defined in the company funding sheet.

Step 5: Define funding assignment rules. Funding assignment rules can be defined in the project/shell funding sheet or the funding template (or both). You can also determine the order in which to consume funds if you will be using automatic fund assignment from business processes. (This step can be done any time after creating the funding template. If you define assignment rules in a template, they will be carried over to the sheets created from them.)

Additional steps: Create funding rules in the rules engine. You can create funding rules in the rules engine that can help you manage your funds and fund balances. The most common rule is to keep your company fund balances from becoming less than zero. Configure permissions. As you create funding sheets and set up funding business processes, remember to configure the permissions to go with them. Refer to the *Unifier Data Reference Guide* for funding permissions.

Setting up commitment level funding

Commitment level funding is optional. To set it up, first set up funding in the project/shell, and then follow these additional steps.

Commitment funding works in conjunction with general spends and payment applications SOV sheets.

Before you begin. Be sure that the project/shell funding has been set up, with funds allocated and available on the project/shell funding sheet. Data sources are available for project/shell funding sheets (and company funding sheets) to track funding that is assigned for specific base commits. Also, be sure you have added the data source "Scheduled Value" to the SOV structure for the project/shell. Commitment funding uses the SOV to track base commit and change commit amounts, and uses the Scheduled Value column to track remaining balances.

Import and set up business processes for commitment funding. In addition to business processes that are used for project/shell funding, you can design business processes for use with commitment funding. In uDesigner, commitment funding is enabled on the base commit (and linked change commit); automatic generation of an SOV must also be enabled. Then, the ability to create (and later access) the commitment funding sheet can be enabled on the form.

Be sure the spends business process that is linked to the base commit has been enabled to consume funding.

Step 1: Create and set up Commitment Funding Template (Admin mode). This template is used to create a commitment funding structure in the project/shell, which in turn is used to create the individual commitment funding sheets for each base commit record. You can add columns to the template, but not rows.

Step 2: Define funding assignment rules. This is done in the Assignment tab of the Properties window. Assignment rules can be defined in the commitment funding template, structure or sheets. (This step can be done any time after creating the funding or commitment funding template. If you define assignment rules in a template, they will be carried over to the structure and sheets created from them.)

Step 3: Create Commitment Funding Sheet Structure (User mode). Structures are created at the project level in User mode from a commitment funding template. When commitment funding sheets are created from base commit records, this default structure is used. You can also create a commitment funding structure in a project/shell template.

Step 4: Create individual commitment funding sheets. This is done automatically the first time you select the Funding button on a base commit business process form (this button becomes available on specific steps as designed in uDesigner). After creation, the commitment funding sheet is available for viewing or modification by selecting the Funding button on the base commit or associated change commits, or from the Commitment Funding log itself.

Additional steps: Configure permissions. Module permissions must be granted to the commitment funding template, to the commitment funding sheet in a project/shell template (if using), to commitment funding sheet in a project/shell (for the node to be visible). In addition, record level permission must be granted to individual commitment funding sheets. By default, the owner of the base commit will have permissions to the sheet. Additional users must be granted view or edit permissions. Refer to the *Unifier Data Reference Guide* for general funding permissions. Sheet permissions are granted User mode. **Additional assignment details.** After the commitment funding sheet and SOV sheet are created, additional funding assignment details can be defined on the Fund Assignment window (accessed from the SOV sheet or commitment funding sheet).

Importing Fund Attribute Form

The Fund Details form can be configured by creating a Fund Attribute Form in uDesigner. With the import of this attribute form, you are also importing designs for the fund picker, which is used to add funds to business processes and project/shell funding sheets, as well as "Find" on the picker. If you do not create a Fund Attribute Form, a default fund code form and fund picker will be used.

Only one Fund Attribute Form may be created and imported per company.

Note

- Use caution when modifying and re-importing an attribute form. For example, if you change a data definition, such as Fund Category after it is being used in the funding sheet, the system may not see the new data definition and will produce an error.
- Oracle strongly recommends that you use the **Development** environment to create your uDesigner business processes and attribute forms before deploying to the **Test/Production** environment.

To import a Fund Attribute Form into Unifier **Production** environment, see [Importing Configuration Packages](#).

Creating a Company Funding Sheet

The Company Funding Sheet tracks all sources of funding across all projects or CBS shells. You create only one sheet per company. Funding sources that are made available at project/shell sheet level or commitment level are rolled up to the company sheet, which maintains the overall fund information.

After it is created, the company funding sheet can be edited, but not deleted. The company funding sheet must be created before creating individual project/shell funding sheets.

To create the company funding sheet:

1. Go to the **Company Workspace** tab, and switch to **User** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Funding**. The Company Funding Log opens.
3. Select **New**. The Properties window opens.
4. Enter a **Title** and **Description**.
5. For **Display Mode**, choose **Flat** (no indenting of rows) or **Tree** (allows indented, nested rows).
6. Select **Save**. The funding sheet is listed in the Company Funding log.

Add Columns to the Company Funding Sheet

The columns on the company funding sheet are used to track project/shell level funding, as well as commitment level funding if you are using it, and keep track of fund balances.

To add a column to the company funding sheet:

1. From the Company **Funding** log, select the company funding sheet, and select **Open** from the *gear menu* (⚙️). The Company Funding Sheet window opens.
2. Select the **Add Columns**. The New Column window opens.
3. Complete the fields as described in the following table.
4. Select **Save** to add the new column to the company funding sheet.

In this field:	Do this:
Name	The name you choose will appear as the column header. You may manually enter a column name, or, if you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.
Type	Choose one of the following types: • From Business Process • Direct Entry • Line Item Content • Formula
Datasource	All columns must be associated with a data source. The data source that you choose will determine which of the following options are available. The types of Data sources available are as follow. • Single Sources: These values roll up from a single, defined source, such as a business process or a system defined source. • Logical Sources: These include user-defined Manual Entry or Formula columns.

In this field:	Do this:
Single Source	Data sources that contain funding sources and consumption information; that is, Fund subtype of Cost business processes, which allocate funding, Spends business processes that consume funding, and Commit business processes that trigger commitment funding, if used. • Business Processes: List of cost-type business processes that include funding data definitions. • Project/Shell Funding: Sum of all funding sources at project/shell level for each project/shell, as rolled up from each individual project/shell funding sheet. The information that gets rolled up to this column is dependent on the project/shell funding sheet setup for each project/shell. • CBS Funding: Sum of all funding sources at CBS level for each project/shell, rolled up from each individual project/shell funding sheet. The information that gets rolled up to this column is dependent on the project/shell funding sheet setup for each project/shell. • Manual Funding by project/shell: Sum of all project/shell-level funds that are allocated at project/shell level manually. • Manual Funding by CBS: Sum of all funds that are allocated at CBS level manually. • Commitment Funding: Sum of all funds that are allocated at the commitment level (if used) for each project/shell. • Records Funded at Project/Shell Level: Sum of all records that are funded at project/shell level. These are records that have already ended their workflow or hit terminal status. • Records Funded at CBS Level: Sum of all records that are funded at CBS Level. These are records that have already ended their workflow or hit terminal status. • Records Funded at Commitment Level: Sum of all records that are funded at the commitment level (spends BPs that are linked to base commits enabled for commitment funding). These are records that have already ended their workflow or hit terminal status. • Transient Records Funded at CBS Level: Sum of all records that are funded at CBS Level. These are records that are currently in process. • Transient Records Funded at Project Level: Sum of all records that are funded at project/shell level. These are records that are currently in process. • Transient Records Funded at Commitment Level: Sum of all in-process records that are funded at the commitment level. • Fund1 to Fund25: Generic data sources that can be used for manual entry or formula columns to make the values reportable.

In this field:	Do this:
Logical Sources	Logical sources include the following data sources. • Company Funding: This is commonly the column to use to manually enter the starting amount for each fund. • Company Fund1 to Fund25: Generic data sources that can be used for manual entry or formula columns to make the values reportable.
Data Format	The following options are applicable for Manual Entry or Formula columns. • Currency: right-aligns column contents and includes a currency symbol, formatting the value to the specified currency for the sheet. • Percentage: right-aligns the contents and includes a percentage symbol
Display Mode	The following options refer to whether the column is displayed on the sheet. • Show: Choose this option to allow users to view this column. • Hide: Hidden columns are active but not displayed and can be accessed by users with "create" permission on the funding sheet.
Column Position After	The new column will be inserted after the column selected.

Note

As funding is consumed from individual funds, the new balance will not be reflected on the company funding sheet by default. You can track your fund balances by adding columns to roll up funding assignments from business process or by manual assignments from the project/shell funding sheets, and commitment funding sheets if used, and then adding a formula column to keep track of the balance. You can also use the rules engine to create a rule to keep this balance from going less than zero (or another amount).

Add Rows (Funds) to the Company Funding Sheet

Each row of a Company Funding Sheet represents an individual source of funds. The funds defined here are used in individual project/shell funding sheets.

Note

After fund assignments have been made against them on project/shell funding sheets, you will not be able to edit company funding sheet rows.

To add company funding sheet rows (funds):

1. From the Company Funding Sheet, select **Add Row**.
2. Complete the Fund Attributes window fields:

- **Fund Code**
- **Fund Description**
- **Fund Category**
- **Fund Name**
- **Fund Long Description**

3. Select **Save**. The fund appears as a row on the Funding Sheet in alphabetical order.

To edit a row:

1. Select a fund code in a row, which appears as a link. The Fund Attributes tab opens in another pane.
2. Make changes, and select **Save**.

Activate or deactivate a row:

1. From the Company Funding Sheet, select **Menu Options**, and select **Fund Status**.
2. Select the checkbox for each row you want to edit.
3. Select **Activate** or **Deactivate**. All the selected rows will have their status changed to Active or Inactive.
4. Select **OK** to close the Confirmation message.

To delete a row:

1. From the Company Funding Sheet, select **Menu Options**, and select **Fund Status**.
2. Select the checkbox for each row you want to edit.
3. Select **Delete** and **Yes** to confirm. All selected rows will be deleted.

Creating a Project or Shell Funding Sheet Template

Funding templates are created and set up in the Templates node, and are used to create individual project/shell funding sheets. They can also be used to create a funding sheet in a project/shell template.

Setting up the funding template consists of adding columns, which correspond to the data sources (for example, business process transactions, formulas, values you enter manually, and so on) that you want to track for each funding source. It can also include adding rows (funds).

You can specify fund assignment rules in the template or individual project/shell funding sheets. See [Defining Fund Assignment Options for Project/Shell Funding](#).

To create a funding sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Funding**, and then select **Funding Sheet**.
3. Select **New**. The Properties window opens.
4. Enter a **Title** and **Description**.
5. For **Display Mode**, choose **Flat** (no indenting of rows) or **Tree** (allows indented, nested rows).
6. Select **OK**. The template is listed in the log.

After creating the funding template, you can open the sheet and define columns and add funds (rows).

Add a Column to the Funding Template (or Project/Shell Funding Sheet)

These procedures are applicable to funding sheet templates, funding sheets, and funding sheets created in project/shell templates.

Funding columns specify the data sources (business process transactions, formulas, values entered manually, and so on) that will be displayed on the project/shell funding sheet. Default columns on funding sheet are Fund Code and Fund Name. If a Fund Attribute Form has been imported, in which the label of Fund Code data element and Fund Name data element were modified, the new labels will be displayed as column headers.

Note

Some project funding columns require assignment information at the project level and cannot be created in the template (for example, Consumed Funds, CBS Funding).

To add a funding column:

1. Open the funding sheet or template:
2. Open the funding template, and select **Columns**. The Column Log opens, displaying the list of existing columns.
3. Select **New**. The Column Properties window opens.
4. Complete the Column Properties window as described in the table below.
5. Select **OK** to add the new column.

In this field:	Do this:
Name	The name you choose will appear as the column header. You may manually enter a column name, or, if you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.
Datasource	All columns must be associated with a data source. The data source that you choose will determine which of the following options are available. The types of Data sources available are: Single Sources: These values roll up from other sources. These include cost type business processes, some pre-defined cost columns. Logical Sources: These include user-defined Manual Entry or Formula columns.

In this field:	Do this:
Single Source	Data sources that contain funding sources and consumption information; that is, Fund subtype of Cost business processes, which allocate funding, Spends business processes that consume funding, and Commit business processes that trigger commitment funding, if used. • Business Processes: List of cost-type business processes that include funding data definitions. • Manual Funding by CBS: Sum of all funds that are allocated at CBS level manually. • Commitment Funding: If commitment funding is used, this data source tracks funds that are allocated across base commit and change commit business process records enabled for commitment funding. Reflects sum of Funding Across All Funds and Funding By Discrete Funds data sources on commitment funding sheets. Select the link to view cell details. • Records Funded at Project/Shell Level: Sum of all records that are funded at project/shell level. These are records that have already ended their workflow or hit terminal status. • Records Funded at CBS Level: Sum of all records that are funded at CBS Level. These are records that have already ended their workflow or hit terminal status. • Records Funded at Commitment Level: Sum of all records that are funded at the commitment level (spends BPs that are linked to base commits enabled for commitment funding). These are records that have already ended their workflow or hit terminal status. • Transient Records Funded at CBS Level: Sum of all records that are funded at CBS Level. These are records that are currently in process. • Transient Records Funded at Project Level: Sum of all records that are funded at project/shell level. These are records that are currently in process. • Transient Records Funded at Commitment Level: Sum of all in-process records that are funded at the commitment level.
Logical Sources	Logical sources include: • Project/Shell Funding: Sum of all funding sources at project/shell level. The information that gets rolled up to this data source is dependent on the project/shell Funding Sheet setup for each project/shell. • CBS Funding: Sum of all funding sources at CBS level. The information that gets rolled up to this data source is dependent on the project/shell Funding Sheet setup for each project/shell. • Manual Funding by Project/Shell: Sum of all funds that are allocated at project/shell level manually. • Fund1 to Fund25: Generic data sources that can be used for manual entry columns to make the values reportable.

In this field:	Do this:
Entry Method	This is applicable for logical data sources. Manual Entry: Choose Direct Entry into Cell to allow entry directly into the cell, or Line Item Content to allow data entry through a line item window. Formula: Values are calculated based on a specified formula entered for the column. Formulas can include the values of other columns. Select Create to create the formula.
Data Format	Applicable for Manual Entry or Formula columns: Currency: right-aligns column contents and includes a currency symbol, formatting the value to the specified currency for the sheet. Percentage: right-aligns the contents and includes a percentage symbol
Display Mode	Refers to whether the column is displayed on the sheet. Show: This is the default choice. This indicates that column will display by default on the funding sheet to all users with at least "view" permission for the funding sheet. Hide: Hidden columns are active but not displayed and can be accessed by users with "create" permission on the funding sheet.
Column Position After	The new column will be inserted after the column selected

Add a Funding Column to Project or Shell Cost Sheet

Cost sheets can show fund related information as part of a Funding Manager solution. The following section discusses funding columns you can add to the project/shell cost sheet.

To add a funding column to the Project/Shell Cost Sheet:

1. Open the Cost Sheet template, and select **Add Column**. The New Column window opens.
2. Complete the fields in the New Column window. For Data Source, choose from the following:
 - **Line Item Content** type: Data sources that contain fund related information:
 - **Funded Records:** Sum of all Records that are funded at CBS Level.
 - **Unfunded Records:** Sum of all Records that are not funded at CBS Level.
 - **Manual Funding by CBS:** Sum of all funding sources that are allocated at CBS level manually.
 - **Formula** type: Data sources that are available at project/shell level:
 - **CBS Funding:** Sum of all funding sources at CBS level. The information that gets rolled up to this data source is dependent on Project/Shell Funding Sheet setup for each project/shell.

Note

You cannot select this data source unless a funding source is selected under "Processes Contributing Assignable Funds" for CBS level. This is located under Project Funding sheet (open the Project Funding Sheet, select Properties, and then select the Assignment tab).

3. Select **Save** to add the new funding column to the project/shell cost sheet.

To edit a column:

1. Select the hyperlink text in the **CBS Code** column. The **General** tab will open in a secondary pane.
2. Edit information as necessary.

Note

Although it is possible to change the entry methods for a column (for example, from "Line item content" to "Direct entry into cell"), use caution when doing so if you have already entered values in the column cells. For example, if you change from line item entry to direct cell entry, the Amount value shown in the cell will appear correctly, but will be an editable direct entry amount, and detailed line item information will be lost.

To move a column:

Select and drag the column headers in the log to rearrange columns. A blue line will appear, indicating where the column will be placed.

To delete a column:

Right-click a column header, and select **Delete**. When the Confirmation message appears, select **Yes** to continue.

Note

If the column is being used in a formula in another column, you must remove the column from the formula before you can delete it. If the column contains a cell with line item data, you must first remove each line item before it can be deleted.

Add Rows to the Funding Template

These procedures are applicable to funding sheet templates, funding sheets, and funding sheets created in project/shell templates.

Each row of a project/shell funding sheet represents an individual source of funds. The funds added here are funds that are active under the company funding sheet.

Note

After fund assignments have been made against them, you will not be able to edit project/shell funding sheet rows. To view the status of a fund, select the **Fund Status** option in **Menu Options**.

To add rows (funds) to the funding template or project/shell funding sheet:

1. Open the funding sheet or template.
2. Select **Rows**, and then select **Add Row**. The Fund Detail window opens. If you have imported a Fund Attribute form, a customized Fund Detail window will open.
3. Select a fund from the fund picker (or Fund Code field).
You can search for a specific fund in the fund picker by selecting the Find button and opening the Find form. Enter search criteria and select Search. This limits the number of funds that are displayed to those that match the search criteria.
4. You can search for a specific fund in the fund picker:
 - a. Select the Find button. The Find window opens. The window that opens will depend on the design in uDesigner.
 - If an attribute form is not defined, the default Find window will allow you to search by Fund Code or Fund Name.
 - If an attribute form is defined, the Find window can also be designed in uDesigner, and you may have additional fields to search by.
 - b. Enter search criteria and select Search. This limits the number of funds that are displayed to those that match the search criteria.
5. Select **OK**. The fund appears as a row on the Funding Sheet. Funds are displayed in alphabetical order on funding sheet.
6. To view fund details, select a fund under fund code column. If you import a Fund Attribute form then you will see customized detail form instead of a generic fund detail form.

Creating a Project/Shell Funding Sheet

The Project/Shell Funding Sheet tracks how funding is being allocated and consumed at the project/shell level. Project/Shell Funding Sheets work in conjunction with the Company Funding Sheet. Allocating funding sources at project/shell level can be done manually or through a business process.

A Funding Template and Company Funding Sheet must be completed before you can create a Project/Shell Funding Sheet.

To create the Project/Shell Funding Sheet:

1. Go to the shell tab, and switch to **User** mode.
2. In the left Navigator, select **Cost Manager**, and then select **Funding**. The Funding Sheet log opens.
3. From the toolbar, select **Create**. The Select Template window opens.
4. Select a template, and select **Create**.
The Funding Sheet displays in the log. You can use the Funding Sheet as it is or set it up to meet the needs of the project/shell.

Note

Filters that you set up in the shell template for a Funding Sheet are not currently included in the Project/Shell Funding Sheet. To use filters, you must set them up in the Project/Shell Funding Sheet. For more information, see [Searching for Fund Codes and Creating and Applying Filters](#).

Add Columns to the Project/Shell Funding Sheet

Columns are added to a Project/Shell Funding Sheet in the same way as they are added to a Funding Template. See [Add a Column to the Funding Template \(or Project/Shell Funding Sheet\)](#).

Add Project or Shell Funds (Rows)

Rows are added to a Project/Shell Funding Sheet in the same way as they are added to a funding template. [Add Rows to the Funding Template](#)

To edit a row:

1. From the Funding Sheet, select **Manage Rows**.
2. Use the arrow buttons to move items from the Available Company Fund Codes section to the Selected section.
3. Select all desired columns, and select **Save**.

To remove a row:

1. From the Funding Sheet, select **Manage Rows**.
2. Use the arrow buttons to move items out of the selected section.
3. Remove all desired columns, and select **Save**.

Defining Fund Assignment Options for Project/Shell Funding

The following options are available as part of assignment rules at project/shell level and CBS level. These can be defined in a funding template, or individual project/shell funding sheets.

Project and CBS Level: Specify the sources of funds for this project/shell, either manual or via fund appropriation business processes.

Assignment Levels and Rules: For each funding business process (and each status) that has been set up for the project/shell, you specify manual, Auto Order, or Auto Ratio.

For details, see the following procedures.

Set Up Funding Assignment Options

After you create a project/shell funding sheet, you can set up assignment options. This includes specifying whether manual assignment is allowed; defining the business processes that can be used to assign funds to projects/shells or to specific CBS codes; and defining assignment levels.

Project Level and CBS Level: Specify how funds can be added for this project or shell. This can be Manual (appropriate funds manually from the company funding sheet) or through funding appropriation business processes that appropriate company funds for the project or shell.

You can define funding appropriations at the project level (not associated with specific CBS codes) and at the CBS level (funding is specified per CBS code). You can "mix and match" for each project, with some business processes using project level funding, and others CBS level. Manual fund appropriations can be done at both levels.

Assignment Levels and Rules: For each funding business process that has been set up for the project/shell, you specify manual, Auto Order, or Auto Ratio. You also choose to assign funds at the Project Level (funding is consumed based on the total of the spends business process, providing greater flexibility for fund assignment), or CBS Level (funding is consumed per line item of a spends business process, which provides greater control over how funds are spent on each item).

- **Manual:** Funds can be manually assigned. As spends business processes (for example, invoices or payment applications) are routed and reach specified statuses, the amounts to be funded are collected under the Unassigned total on the funding sheet. Funds are assigned manually to these spends records.
- **Auto Order:** Funds are assigned automatically when a spends business process reaches a specified status. Funds are assigned based on the fund order, which is defined on the funding sheet by selecting the Fund Assignment Order button. When funds are consumed on one fund, the next funding source is used for funding. After all funds are consumed, remaining spends are collected under Unassigned.
- **Auto Ratio:** Funds are assigned automatically when a spends business process reaches a specified status. Funds are assigned based on the fund ratio, which is automatically calculated based on current fund levels. After all funds are consumed, remaining spends are collected under Unassigned.

Note

Be sure you have imported and set up any business processes you will be using for fund appropriation and assignment in the project/shell before setting assignment rules

To set up fund assignment rules:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. Open the company or shell funding sheet template:
 - In the left Navigator, select **Templates**, select **Funding**, and then select **Funding Sheets**; or
 - In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**; in the left Navigator, select **Cost Manager**, select **Funding**, and then select **Funding Sheet**.
3. Select the template in the log, and select **Properties**.
4. Select the **Assignment** tab.
5. Complete the window as described in the following table.
6. Select **OK**.

In this field:	Do this:
Funding Assignment	Select the Funding Assignments sources. The sources can be at the CBS level, where funds are assigned to specific CBS codes, or project/shell level, which allows project/shell level funding without assigning funds to specific CBS codes.
Project/Shell Level	Select Add to add project/shell level sources. Options include: - Manual: Allows manual entry of project/shell fund assignments on the sheet - Business Processes: Any cost type business process that is created with sub-type Line Items with Fund Code and Classification as Generic.
CBS Level	Select Add to add CBS level sources. Options include: - Manual: Allows manual entry of CBS level fund assignments on the sheet - Business Processes: Any cost type business process that is created with sub-type Line Items with both CBS Code and Fund Code and Classification as Generic.
Assignment Levels	Allows you to set fund assignment rule for each spend-type business process that is configured in your project/shell. The assignment level will only show those spend type business processes that consume funds. This option is available while designing a spend type business process in uDesigner.

In this field:	Do this:
Assignment Rules	Select the drop-down list, and select a project/shell-level or CBS-level rule. Project /Shell Level: - Manual (Assign by BP Record Total): All spends are collected as Unassigned. These spends should be assigned manually to one or more funds at project/shell record Level. - Manual (Assign by BP Line Item): All spends are collected as Unassigned. These spends should be assigned manually to one or more funds at the project/shell line item. - Auto Order (Assign by BP Record Total): Funding sources are arranged in a prescribed order, and spend are assigned in that order. The assignment order is defined under the project/shell Fund Assignment Order window, which you can access by selecting Funding Sheet, and then selecting Fund Assignment Order. - Auto Order (Assign by BP Line Item): Funding sources are arranged in a prescribed order, and spend are assigned in that order at line item level. The assignment order is defined under the project/shell Fund Assignment Order window, which you can access by selecting Funding Sheet, and then selecting Fund Assignment Order. - Auto Ratio (Assign by BP Record Total): Funding sources are proportionally consumed until fully depleted. The fund level itself automatically defines the ratio. After the funds are consumed, remaining spends are collected as Unassigned. - Auto Ratio (Assign by BP Line Item): Funding sources are proportionally consumed until fully depleted at line item level. The fund level itself automatically defines the ratio. After the funds are consumed, remaining spends are collected as Unassigned. CBS Level: - Manual: All spends are collected as Unassigned, and are manually assigned to one or more funds at CBS level. - Auto Order: Funding sources assigned to that CBS are arranged in a prescribed order, and spends are assigned in that order. After all funds are consumed, remaining spends are collected as Unassigned. Fund Assignment Order for CBS can be defined under Fund Assignment Order window, which you can access by select Cost Sheet, and then selecting Fund Assignment Order. - Auto Ratio: Funding sources assigned to that CBS are proportionally consumed until fully depleted. The fund level itself automatically defines the ratio. After all funds are consumed, remaining spends are collected as Unassigned. - SOV Auto Order: This option indicates that the assignment should be at SOV level using Auto order option. The order assignment will be defined under

In this field:	Do this:
	Fund Assignment window, which you can access by selecting SOV. SOV Auto Ratio: This option indicates that the assignment should be at SOV level using Auto ratio option. The ratio will be defined under Fund Assignment window, which you can access by selecting SOV.

Set Fund Assignment Status and Order

You can control whether a fund is available when assigning funds to spend by activating or deactivating the fund at the project/shell level. Fund assignment order is required if you decide to consume funds automatically. You can also view the Fund order. This will be the order that will be used while assigning funds with Auto Order option.

Funds can be automatically consumed at project/shell level by following fund order defined under Fund Assignment Order window on project/shell Funding Sheet.

To set the fund assignment status and assignment order:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. Open the project/shell Funding Sheet:
 - a. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
 - b. In the left Navigator, select **Cost Manager**, select **Funding**, and then select **Funding Sheet**.
3. Open the Funding Sheet.
4. From the toolbar, select **Fund Assignment Order**. The Fund Assignment Order window opens showing whether funds are active or inactive.
5. Select a fund in the table, and select **Activate** or **Deactivate**. Deactivating a fund prevents it from being available when assigning funds to spend.
6. If you want to change the assignment order, select a fund, and select **Move Up** or **Move Down**.
7. Select **Close** to exit the window.

Set Fund Assignment Order at the CBS Level

The Unassigned (CBS Level) link on the Project/Shell Funding Sheet displays the total of funds at the CBS level. Funds can be automatically consumed at CBS level by following fund order defined for each CBS Code from the Fund Assignment Order window on the Project/Shell Cost Sheet.

To set fund assignment order at CBS Level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, and then select **Cost Sheet**.

4. Open the Project Cost Sheet.
5. Select the three dots at the bottom of the sheet, and then select the **Fund Assignment Order** tab.
6. Select a **CBS code** from the upper pane. A list of funds that are available for this CBS will be displayed on the bottom pane.
The bottom pane will also display assignment status of funds. You can modify assignment status of a fund from the Fund Assignment Order window in the Project Funding Sheet. Funds with Inactive status will not be used as part of consumption process.
7. Select a fund, and select **Move Up** or **Move Down** to change fund order.
8. If you have defined **Breakdowns** for a CBS code, select breakdown to view funds.

Set Fund Assignment Order at the SOV Level

Funds can be automatically consumed at the SOV level by following fund order or fund ratio defined for each CBS in the **Fund Assignment Order** window on a SOV Sheet. You have ability to defined order or ratio for each SOV.

Note

Fund assignment details can be set on the SOV sheet when you are doing project/shell level funding as well as commitment level funding. The following procedure discusses how to do SOV Auto Order at the project/shell level. If the base commit that created the SOV has been enabled for commitment funding, fund assignment is done at the commitment level.

To set the Fund Assignment Order at the SOV Level: for CBS—SOV Auto Order:

1. Open the SOV Sheet.
2. Select the **Fund Assignment** tab.
You can set Fund Order or Fund Ratio. This is dependent upon the Assignment Rule that you choose for spend under the **Assignment** tab of the **Properties** window for the **Project/Shell Funding Sheet**.
3. Select a CBS code.
4. Select a fund, and then select **OK**.
The assignment status of funds displays. You can modify assignment status of a fund from the **Fund Assignment Order** window in the **Project Funding Sheet**. Funds with *Inactive* status will not be used as part of consumption process.
5. Perform any of the following actions:
 - Select a fund to change the fund order.
 - If you have defined **Breakdowns** for a CBS code, select breakdown to view funds.
 - To add a fund:
 - a. Select **+ Add**.
 - b. In the **Add Funds** window, select a fund available for the selected CBS Code, and then select **OK**.
6. Select **Save**.

To set the Fund Assignment Order and Ratio at the SOV Level: for CBS—SOV Auto Ratio:

1. Open the SOV Sheet.
2. Select the **Fund Assignment** tab.
You can set Fund Order or Fund Ratio. This is dependent upon the Assignment Rule that you choose for spend under the **Assignment** tab of the **Properties** window for the **Project/Shell Funding Sheet**.
3. Select a **CBS** code.
The assignment status of funds displays. You can modify assignment status of a fund from **Fund Assignment Order** window in the **Project Funding Sheet**. Funds with *Inactive* status will not be used as part of consumption process.
4. Perform any of the following actions:
 - Select a fund to change the fund order.
 - If you have defined **Breakdowns** for a CBS code, select breakdown to view funds.
 - To add a fund, select **+ Add**.
 - a. In the **Add Funds** window, select a fund available for the selected CBS Code, and then select **OK**.
 - b. Select a fund and enter a % value.
5. Select **Save**.

Creating Commitment Funding Sheet Templates

Commitment Funding Sheet templates are created and set up in the Templates node, and are used to create the commitment funding sheet structure in a project/shell (or in a project/shell template). This structure is then used when sheets are created for individual base commit records.

Setting up the commitment funding template consists of adding columns, which correspond to the data sources (for example, business process transactions, formulas, values you enter manually, and so on) that you want to track for each funding source.

You can specify fund assignment rules in the template, structure or individual commitment funding sheets.

To create a new commitment funding sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Funding**, and then select **Commitment Funding Sheet**.
3. Select **New**. The Properties window opens.
4. Enter a **Title** and **Description**.
5. Select **OK**. The template is listed in the log.

After creating the funding template, you can open the sheet and define columns.

Add and Manage Commitment Funding Sheet Columns

These procedures are applicable to commitment funding sheet templates, commitment funding structures created in a project/shell, commitment funding sheet structures created in project/shell templates, or individual commitment funding sheets.

Funding columns specify the data sources (business process transactions, formulas, values entered manually, and so on) that will be displayed on commitment funding sheet.

To add a column to a commitment funding template, structure or sheet:

- 1. Open the commitment funding sheet, template or structure.
- 2. Select **Columns**. The Column Log opens, displaying the list of existing columns.
- 3. Select **New**. The Column Properties window opens.
- 4. Complete the Column Properties window as described in the following table.
- 5. Select **OK** to add the new column.

In this field:	Do this:
Name	The name you choose will appear as the column header. You may manually enter a column name, or, if you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.

In this field:	Do this:
Datasource	All columns must be associated with a data source. Note In these data source definitions, the terms All Funds and Discrete Fund refer to the fund assignment options. These options determine how the SOV lines (and therefore, the commit lines) will be funded, either automatically or manually from the entire list of funds available to the commit, or by one specific fund. (See Define Commitment Fund Assignment Details.) The data sources available for commitment funding sheets are: • Funding Across All Funds: Use this column to enter (or calculate) the amount of each fund to allocate for this base commit record. The rows on the sheet are the funds that will be used to fund the commit. The value entered here will be the fund amount available for all commit lines that have "All Funds" as assignment. This can be a manual entry column, or a formula that uses another manual entry column as the basis of the formula. • Funding By Discrete Fund: This column displays the sum total of all the line items of base and change commits that are funded by a specific (or "discrete") fund. This value can be used to determine the fund balance during consumption. • Records Funded Across All Funds: Reflects the total of funds consumed from records that are funded based on All Funds, whether funding is done manually or automatically. • Records Funded By Discrete Fund: Displays the total of funds consumed from records that are funded based on a discrete fund, whether funding is done manually or automatically. • Fund Balance Across All Funds: This column tracks the fund balance across all funds. The formula used is (Funding Across All Funds) - (Records Funded By All Funds). • Fund Balance By Discrete Fund: This column tracks the fund balance by specific fund chosen in the Fund Assignment window. The formula used is (Funding By Discrete Fund) - (Records Funded By Discrete Fund). • Funding Ratio Across All Funds: The value of this column is calculated automatically. It reflects the % ratio to use when performing fund assignment ratio during consumption. The formula is (Fund Balance

In this field:	Do this:
	Across All Funds Per Fund) / Total of Fund Balance Across All Funds). • Commitment Funding 1 to 25: Numeric data sources that are available to use to enter values manually or create formulas based on other columns. These are reportable via user-defined reports.
Entry Method	Choose one (the options that are available are dependent on the data source chosen): • Manual Entry: Users enter values directly on the sheet. • Formula: Values are calculated using the entered formula. Formulas can include the values of other columns. Select Create to create the formula.
Display Mode	This controls the display of numeric column data. • Show as percentage. Data is displayed as % • Decimal places. Choose 2 to 8
Total	Determines what will display in the "Total" (bottom) row for the column: • Blank: The total of this column is not applicable and will not display on the cost sheet. Choose this column for percentage columns and other columns where it does not make sense to display the sum total. • Sum of All Rows: The sum total of the column values is displayed. • Use Formula Definition: For formula columns; the formula will be applied to the "Total" row in the same way it is applied to other rows in the column.
Column Position After	The new column will be inserted after the column selected

To create a formula column:

1. In the Column Properties window, choose **Formula** as the **Entry Method**, and then select **Create**. The Formula Creation window opens.
2. Enter the first value in the formula:
To enter numerical values into the formula, use the number keys on the on-screen keypad. (Include parentheses, % or decimal point as necessary.)

To add a column value into the formula, select it from the list in the left pane, and then click **Select**. Options include:

- **Columns:** These are columns that have been added to the sheet. The value in the corresponding row will be used in the formula.
- **Total Elements:** These are the columns on the sheet that display a total (either the sum or formula definition, as defined in the Total option for that column). The value of the Total for that column will be used in the formula.
- An additional default Total Element is also available: **Commitment Total Funded By All Funds**. It is the sum of all commit line items (base and change commits) that have the assignment option "All Funds" (as selected for each commit line on the Fund Assignment window).

As you build the formula, it appears in the Formula box in the upper-right portion of the window.

3. Select the appropriate operator: add, subtract, multiply, or divide.
4. Continue to alternate between choosing values and operators to add to the formula. You can select **Undo** at any time to undo the last action. Select **Clear All** to clear the entire formula.
5. When the formula is complete, select **OK** to save your formula and return to the Column Properties window.
6. To change the formula after creating it, select **Modify** (next to the Formula option), clear the old formula (select **Undo** or **Clear All**), and then re-enter it.

To create a column by copying an existing column:

1. In the **Column** log, select a column, and select Copy. The Column Properties window opens.
2. Make changes as necessary for the new column. You must change at least the data source.

To edit a column:

1. In the Columns Log , select a column, and select **Open**. The Column Properties window opens.
2. Make edits as necessary, and select **OK**.

Note

Although it is possible to change the entry methods for a column, use caution when doing so. For example, if you change the entry method from Manual Entry to Formula, any existing values you have entered in that column will be replaced with the formula. Some column properties for some system data sources cannot be modified.

To move a column:

- In the Columns Log, select a column to move, and then select **Move Up** (Left) or **Move Down** (Right). The order in which the columns appear in the Log window is the order (from left to right) that they appear on the sheet.

To delete a column:

- Select a column from the Columns Log, and select **Delete**. The column will be deleted.

Note

If the column is being used in a formula in another column, you must remove the column from the formula before you can delete it.

Defining Fund Assignment Options for Commitment Funding

Fund Assignment refers to how funds are to be consumed as spends type business processes (for example, invoices and payment applications) come in against the base commit that is being funded.

The first step is defining the Assignment rules—whether funding is to be done manually or by auto ratio. The assignment levels and rules are defined on the Assignments tab in the Properties window of the commitment funding sheet. This step is required to do commitment level funding.

The Assignment tab lists the spends business processes that are linked to base commits enabled for commitment level funding. For each listed business process, you define how fund assignment will be done when these spends records come in against the base commit (either manually, or automatically by fund ratio).

You can define these assignment rules on the commitment funding template. When you create a commitment funding structure in a project/shell, these assignment rules will be copied to it, and when you create sheets from the structure, they will be copied to the sheets. If you need to, you can modify these rules on individual structures and sheets.

The next step is optional: define Fund Assignment details per SOV line; that is, define whether a specific fund must be used to fund a particular line on the commit. This allows you to provide details about fund assignment or consumption for each line on the base commit or any change commits. You access the Fund Assignment window by selecting the Fund Assignment button on the commitment funding sheet or SOV sheet associated with the base commit.

If you do not define any assignment options in this window, All Funds is the default selection. This means that all funds that have been allocated to the base commit on the commitment funding sheet will be available for funding each line of the spends business process created against it (either manually or by auto ratio, as defined by the assignment rules).

Fund assignment on these lines is tracked by commitment funding sheet columns using data sources that for records or fund balance "across all funds." For more information, see [Add and Manage Commitment Funding Sheet Columns](#).

Sometimes, you may need to specify that a specific fund be used to fund a specific CBS code or SOV line. For these lines, you can select a specific fund (or "discrete fund"). Fund assignment is then tracked by commitment funding sheet columns using data sources for records or fund balance "by discrete fund.")

For details, see the following procedures.

Define Commitment Fund Assignment Rules

The fund assignment rules define how assignment will be done on the spends business processes created against the base commit being funded: either manually or automatically by fund ratio.

Funding assignment levels and rules can be defined in the commitment funding template, structure, or individual sheets. It is easiest to set them once, in the template, and have them carried forward into the structures and sheets created from it. If necessary, these options can be modified later for individual structures and sheets. These rules must be defined on the commitment funding sheet to do commitment level funding.

To set up commitment funding assignment rules:

1. Open the **Properties** window of the commitment funding template, structure or sheet. (From the File menu, choose Properties.)
2. Select the **Assignment** tab. The list displays all General Spends and Payment Application Business Processes that are linked to a Base Commits that has been enabled for commitment funding and has been designed to consume funds according to the design.

3. For each listed spends business process, select the **Assignment Rule** drop-down list, and select one of the following:
 - **Commitment Level - Manual:** Funds are manually assigned at runtime. As spends business processes are routed and reach specified status, the amounts to be funded are collected under the Unassigned total on the commitment funding sheet, similar to project/shell level manual funding. You can then select each line of the spends BP and assign funds at runtime. Consumed funds roll up to the commitment funding sheet and the project funding sheet.
 - **Commitment Level - Auto Ratio:** Funds are assigned automatically when the spends business process reaches a specified status. Funds are assigned based on the fund ratio, which is calculated based on the fund levels (using the value in the column of data source Funding Ratio Across All Funds on the commitment funding sheet), and is managed and tracked on the commitment funding sheet. If all funds are consumed, any remaining spends amounts are collected under Unassigned.
4. Select **OK**.

Define Commitment Fund Assignment Details

This is an optional step that allows you to provide details about fund assignment or consumption for each line on the base commit or any change commits. The commitment funding sheet works in conjunction with the SOV sheet in tracking the individual line items on the base commit and any change commits. Therefore, you can define details about fund assignment per SOV line. This is done on the Fund Assignment window.

By default, all funds that have been allocated to the base commit on the commitment funding sheet will be available for funding each line of the spends business process created against it (either manually or by auto ratio, as defined by the assignment rules).

However, to specify that a specific fund must be used to fund a specific CBS code (or SOV line), you can specify a specific (or "discrete") fund to use.

You can do fund assignment one row at a time, or several rows at a time (bulk assignment). See the following procedures.

Note

If you do not define fund assignment options, the default will be All Funds for each SOV line.

To set fund assignment details (one row at a time):

1. Open the commitment funding sheet or the SOV sheet template.
2. From the toolbar, select **Properties**, and select the **Assignment** tab. The fund assignment grid view displays each line that is present on the SOV sheet, including CBS breakdowns. (The Fund Assignment button is available on the commitment funding sheet after the SOV has been created for the base commit.)
3. In the **Assignment** column, select the drop-down list, and choose the assignment:
 - **All Funds:** This is the default option. This means that all funds allocated to the commitment funding sheet are available to fund the SOV line or breakdown. (This option must be used if you are doing assignment by auto-ratio.)

On the commitment funding sheet at runtime, funding consumption will roll up to the column using data source "Funding Across All Funds."

- <Fund Code-Fund Name>: Each fund that has been allocated to the commitment funding sheet will display on the drop-down alphabetically. These are referred to as "discrete funds." You can choose to assign a specific fund to an SOV line or breakdown. This means that only that fund will be used to fund that line. (You can choose the same fund code for multiple lines.)

On the commitment funding sheet at runtime, funding consumption will roll up to the column using data source "Funding By Discrete Fund."

Note

If an SOV line has a breakdown, select an assignment for each breakdown, not the SOV line itself.

4. Select **Save** to save the sheet.

To set fund assignment on multiple rows on the SOV sheet (bulk assignment):

1. Open the commitment funding sheet or SOV sheet.
2. From the toolbar, select **Properties**, and open the **Assignment** tab. The fund assignment grid view displays each line that is present on the SOV sheet, and includes an Assignment column.
3. Select a row, or multiple rows by holding down the **Shift** key (to select a range of rows) or **Ctrl** key (to select rows throughout the sheet) while selecting the rows.
4. Select **Bulk Assignment**. The Bulk Assignment window opens.
5. Select the **Assignment** drop-down list, and choose the assignment. The values listed are the same as on the Fund Assignment window for the individual SOV lines.
6. Select **Update**.
7. Select **Save** on the Fund Assignment window to save your changes.

Setting Up Schedule of Values (SOV)

The Schedule of Values (SOV) sheet provides a view of all the following information in one Sheet:

- Purchase Orders (Base Commits)
- Change Orders (Change Commits)
- Payment History (Pay App)

The system supports the following types of SOV:

- General Spends
- Payment Applications
- Summary Payment Applications

The needed SOV type is designed in uDesigner.

The data for the SOV sheet comes from the following BP types:

- Base Commit

- Change Commit

The business processes can be designed to create an SOV sheet automatically upon reaching the designated step.

When line items are added to the SOV sheet, the order of line items in the sheet is based on the time line that the line items were rolled up from the Base Commit and Change Commit records.

The data seen in the SOV sheet is based on the order in which the SOV lines were created. You can use the numeric column to sort the data based on the number that you specify.

When a Base Commits Business Process (BP) is approved, it creates a Schedule of Values (SOV) sheet. The SOV sheet is the "working document" on which committed monies are entered. The committed monies shown on the SOV sheet are rolled up to the Company Cost Sheet.

Note

The Change Commits BPs continue to change or add costs to the SOV during the life of the Project/Shell.

The Schedule of Values (SOV) functionality provides a way to assemble information from contract, change order, and invoice/payment BPs into a SOV sheet, streamlining the process of invoicing for completed phases of a Project/Shell.

SOV functionality is available for Cost type BPs in which the **Allow creation of Schedule of Values** option is defined, or selected, in the design properties. The BPs can be designed to create an SOV sheet automatically upon reaching the designated step.

You may define one SOV sheet per Commit BP, for example, a Purchase Order or a Contract. Rows are automatically populated based on the CBS/Cost/Accounts codes defined in the Commit BP.

Before you can create an SOV:

- Design Commit type BP in uDesigner and deploy.
- Configure and set up commit BP.
SOV functionality is available with commit BPs, for example a Purchase Order for which the Create SOV option is selected in uDesigner. For these BPs, the system automatically creates a SOV sheet upon reaching the designated step. There may be one SOV sheet per Commit Business Process. Rows are automatically populated based on the CBS/Account Codes defined in the Commit BP.
- Create and set up the Project/Shell Cost sheet.

How to Set Up SOV

Before you begin

Base Commits and Change Commits Business Processes must be set up for the Project/Shell.

Step 1: Create and set up SOV template (General Spends only)

You can create a template in the Templates log in Admin mode. If you are using General Spends SOV, the structure that will be used for the SOV sheets is created from the template.

Note

You can define a General Spends SOV structure by copying from an SOV template in the Templates log.

Step 2: Set up SOV Structure (User mode)

1. SOV Sheets are created, either manually or automatically, from Base Commits, based on the structure that is set up in Step 1.
2. For General Spends SOV, the SOV structure is copied from an SOV template.
3. For Payment Application SOV and Summary Payment Application SOV, the structure is copied from the line item grid structure of the Payment Application Business Process. This means that you must first complete the Business Process (BP) setup for the Payment Application BP before you can create the structure.

Step 3: Create SOV Sheets

You can create General Spends, Payment Applications, and Summary Payment Applications SOV structures in project templates.

Creating an SOV Template

An SOV Template needs to be created and set up before you can create a SOV sheet. SOV sheets are created using an SOV Template that defines the columns that will appear on the SOV sheet.

Note

All SOV sheets in a single Project/Shell will use the same template structure.

If an SOV Template does not exist when an SOV sheet is auto-created from a Cost type BP, one will be created automatically with the default columns CBS Code and CBS Item and Breakdown Data. You can edit this structure as needed, but the default columns are not editable.

To create an SOV Template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select **Projects**, and open the **[shell template]**.
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select **Payment Applications**.
4. From the toolbar, select **Update Structure** to open the **Payment SOV Structure** window.
5. From the **File** menu, select **Properties** to open the Properties window. The **Properties** window has two tabs: **General** and **Options**.
6. In the **General** tab, enter values in the **Name** and **Description** fields.
7. Select the **Options** tab. Use the **Options** tab to define the labels (**Labels** block) that will be used for the SOV column headings.

The fields listed in the **Labels** block are the name of labels that are displayed as column headings on the SOV sheet.

You may change the labels or accept them as is.

For clarity, consider using the same labels as is used in the Cost Template and Cost sheets.

8. Read the following, and when finished, select **Apply** and then **OK**.

The following explains how to set up the fields in the **Properties** window, **Options** tab:

Field	Description
Item #	Applicable to both Company level templates and Project/Shell level templates. - At the project/shell level: Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Templates, select Shells, select the [shell type], and open the [shell template]. In the left Navigator, select Cost Manager, select Schedule of Values, and then select Payment Applications. - At the project/shell level: Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Templates, select Shells, select the [shell type], and open the [shell template]. In the left Navigator, select Cost Manager, select Schedule of Values, and then select Summary Payment Applications. - At the company level: Go to the Company Workspace tab, and switch to Admin mode. In the left Navigator, select Templates, and then select General Spends SOV. The Item # field is a system-defined column, with a fixed location on the screen, and it is not available in the column structure window. You can change the Item # column name in the SOV properties page.
Ref	Refers to a reference number for the entire commit. (Another example of a label for this column is "Order Number.")
CBS Code	This field is not editable.
CBS Item	This field is not editable.
Breakdown	The CBS Code Breakdown that you specify in the CBS Detail window for that code.
Description	This label refers to the line item description when the SOV is in line item mode.

The Schedule of Values node, under Project/Shell templates, contains the following sub-nodes:

- General Spends
- Payment Applications
- Summary Payment Applications

The Summary Payment Applications sub-node lists the Business Processes (BPs) of the Summary Payment Applications SOV sheets that have been configured in the template.

You cannot define the structure if a Base Commits or Change Commits BP of Summary Payment Applications SOV sheet is not configured in the template.

You can define one Summary Payment Applications SOV type template for every Base Commits of Summary Payment Applications SOV type BP.

If the Summary Payment Applications SOV sheet is configured in the Project/Shell templates, you can select columns from the Data Elements that are defined on the Detail form of the Summary Payment Applications SOV sheet, and the Base Commits.

Add SOV Columns

Columns determine what data is displayed on the SOV sheets. You can add, modify, delete, hide/unhide columns on the structure. Any modifications you make on the structure will be reflected on all SOV sheets for that project/shell. Columns can be added to the SOV Template or Structure. Each column represents a data source. At a minimum, include a column for Commits Remaining Balance to enable validation of Spends against the Commits.

Note

This information is applicable to adding or editing columns in an SOV template or structure.

To add an SOV column:

1. Open the SOV template or structure.
2. Select the **Columns** button. The columns log opens.
 - The three default columns (**CBS Code**, **CBS Item**, and **Breakdown**) for the General Spends and Payment Applications are not editable and do not appear in the log.
 - The default columns (**Cost Code**, **Code Name**, **Cost Line Item Type**, and **Description**) for the Summary Payment Applications are also not editable and do not appear in the log.
3. Select **New**. The Column Properties window opens.
4. Complete the **Column Properties** window and select **OK**.

In this field:	Do this:
Name	The name you choose will appear as the column header. You may manually enter a column name, or, if you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.
Datasource	All columns must be associated with a data source. The data source that you choose will determine which of the following options are available.
Single Sources	These values roll up from single defined sources, including business processes.

In this field:	Do this:
Logical Sources	The options are: • None: Lets you manually configure the column as a manual entry or formula column to suit your needs. • Commits Remaining Balance: Commits Remaining Balance is a column on the SOV Template/Structure. It reflects the amount of your commits minus the spends, according to a formula you define. • Scheduled Value: This is a formula column can be used to keep track of the remaining SOV balance. (Example formula: Base Commit (Approved) + Change Commit (Approved) - General Spends Invoice (Approved)) Note Be sure to add a Scheduled Value column to the SOV sheet if you will be doing commitment level funding.
Entry Method	This is applicable for logical data sources. • Manual Entry: Choose Direct Entry into Cell to allow entry directly into the cell, or Line Item Content to allow data entry through a line item window. • Formula: Values are calculated based on a specified formula entered for the column. Formulas can include the values of other columns. Select Create to create the formula.
Data Format	Applicable for Manual Entry or Formula columns: • Currency: right-aligns column contents and includes a currency symbol, formatting the value to the specified currency for the sheet. • Percentage: right-aligns the contents and includes a percentage symbol
Display Mode	Refers to whether the column is displayed on the cost sheet. • Show: The default choice. This indicates that column will display by default on the cost sheet to all users with at least "view" permission for the cost sheet. • Hide: Hidden columns are active but not displayed on the cost sheet. Hidden columns can be accessed by users with "create" permission on the cost sheet.
Column Position After	The new column will be inserted after the column selected
Allow sub-breakdown with validation	If this option is selected, the sum of breakdown amounts is validated against the CBS summary amount. That is, the sum of the breakdowns cannot exceed the amount of the CBS code itself.

Deleting Schedule of Values

This section describes how to delete a Schedule of value-based record from a specific shell template.

Note

You can delete a Schedule of value-based record from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Cost Manager**, select **Schedule of Values**, and then select **Payment Applications**.
4. Select a schedule of value-based record for deletion.
5. Select **Delete**.
6. When the prompt appears that asks you to confirm deletion, select **Yes** to delete the schedule of value-based record.

Setting Up Cash Flow

The Cash Flow module lets you generate and compare Baseline, Actuals (or "spends"), Portfolio, Forecast, Derived, and Custom curves in a project or CBS code-based shell. The curve detail levels include:

- **Cash Flow by Project/Shell**
You can track the costs associated with an entire Project/Shell over time.
- **Cash Flow by CBS**
The creation of a CBS detail curve is similar to cash flow by Project/Shell. Use this option if cash flow needs to be tracked at the CBS level as opposed to the Project/Shell level; this lets you plot cash flow curves by specific CBS codes, or all codes, in the Project/Shell.
- **Cash Flow by Summary CBS**
The creation of a Summary CBS detail curve is very similar to cash flow by CBS. Use this option if cash flow needs to be tracked by summary CBS codes. To select this option, the Project/Shell cost sheet must use a tree structure (and therefore has summary CBS codes) rather than a flat structure.
- **Cash Flow by Commitment**
This option lets you plot and analyze cash flow data for an entire commit record (including base commit, any change commits, and related invoices). You can choose a specific business process commitment record within the Project/Shell, such as a purchase order or contract, and track the cost information over time. Each commitment record can have one baseline curve.

The system displays Cash Flow curve detail level data in a Cash Flow Worksheet. The cash flow curve worksheet can display any number of Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, or Custom curves (based on the same detail level). Depending on

curve set up, you can manually enter data; pull data automatically from other sources such as business processes, cost sheet columns, and schedule manager dates (depending on the curve type); and compare multiple curves.

At runtime, the user can view the cost distribution information by CBS code from an existing schedule sheet.

Note

The system generates Actuals information at the start of the day and uses it to update the Forecast information. Therefore, on the last day of an Auto Snapshot (the cutoff date), the Forecast does not include changes that might have occurred between the generation of the Actuals and the generation of the Forecast, and the system might prevent you from updating Actuals information on the last day of the cycle.

To facilitate creation of cash flow curves and roll up of data to company cash flow worksheets, you can create the following in **Admin** mode:

- **Data Sources**
 - You create data sources that can be used to create and identify cash flow curves, and roll up data to company worksheets. You will need to create data sources to create cash flow curves.
 - Data sources are created based on a Curve Type: Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, or Custom curves. Each curve type has its own logic to address different business requirements.
- **Distribution Profiles**

These are optional. Distribution profiles can be applied to cash flow curves to automatically distribute cost data across a specified time period. At runtime, you will have the option of manually distributing data in the cash flow worksheet, or automatically distributing the data using one of these profiles.
- **Company-level Templates**

These are also optional. You can create cash flow detail curve templates, which can be used to create curves at runtime within a project/shell.
- **Project/Shell-level Templates**

You can create cash flow curves within a project template or a CBS-code based shell template. These can be used to create curves in projects/shells; they can also be used to "push" out updates to existing curves. For more information, see [Update Cash Flow Properties and Permissions](#).

How to Set Up Cash Flow

Here is an overview of the steps required to set up the cash flow module.

Note

There are two Cash Flow modules: the module in effect prior to the 9.3 release is called Cash Flow (Basic); the module introduced in 9.3 and discussed here is named Cash Flow. Each module has its own User and Admin mode permissions.

Step 1: Grant yourself permissions to configure the cash flow modules.

Step 2: Create custom cash flow data sources. These are used to create curves in projects/shells. You also define a color for each data source, which will display as the curve color on the cash flow graphs. See [Creating Cash Flow Data Sources](#).

Step 3: Create distribution profiles. These profiles can be used to distribute cost or any value over a period of time. See [Distributing Cost Data](#).

Step 4: Create cash flow templates. You can create any number of cash flow templates at the company level, or you can create cash flow curves within a project/shell template. Setting up cash flow templates is essentially the same as creating the curves manually in a project/shell (or a project/shell template), with some exceptions that are mentioned in the setup procedure details. You can use company-level and project/shell level templates to quickly create cash flow detail curves and rollup curves in projects/shells. See [Cash Flow Curve Templates](#).

Step 5: Create cash flow in a project/shell. You can create any number of cash flow curves in a project/shell. These can be detail level or rollup curves. You can create them manually, by copying an existing curve, or by copying a template. For more information, see Cash Flow.

Step 6: Create cash flow in a company. You can create rollup curves in the company workspace (**Company Workspace** tab), and roll up cash flow data from projects/shells. See [Create Roll-up Templates](#).

Step 7: Grant cash flow permissions to users.

Grant Yourself Permissions to Configure Cash Flow

You must grant permission to yourself, another administrator, or group such as Company Administrators, to configure cash flow modules.

To grant yourself configure permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Standards & Libraries**, expand **Cash Flow**, and select **Data Sources**.
4. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
5. Select **Add Users/Groups**. The User/Group Picker opens.
6. Select the user(s) to whom you want to give configuration permission, select **Add**, and then select **OK**.
The system adds the name(s) to the Permission/Access Control window.
7. Under Permission Settings, select **Modify** and **View**, and select **OK**. The system adds the name(s) to the Permission Settings window.
8. Repeat these instructions to grant permission to cash flow Distribution Profiles and cash flow Templates. (Give these modules Create permission.)
9. Select **OK**.

Create a Cash Flow Distribution Profile

You can create profiles manually or by copying an existing profile.

To create a distribution profile manually:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, select **Cash Flow**, and then select **Distribution Profiles**. The Distribution Profiles log opens.
The default Distribution Profiles record displays in the log. All profiles are stored in this record.
3. Select **Distribution Profiles** in the log, and select **Open**. The Edit Distribution Profiles window opens.
The left side of the window displays the list of the distribution profiles. The right side of the window displays a graphical representation of the profile and is used to define it.
4. Select **New**. This adds a new row to the Distribution Profiles list.
5. Enter a unique **Name** for the profile (up to 30 characters).
6. Be sure the **Active** checkbox is selected if you want it to be available for cash flow curves. If you deselect this checkbox, the profile will not be available for selection on curves.
7. Define the distribution profile on the graph by entering values in the **Profile %** slots.
By default, when you create a distribution profile, the graphical display will be a linear distribution. (5% is entered into each of the 20 slots: 5% x 20=100%.) You can modify this profile by entering a value for each slot for the Profile %. The graph will reflect the values that you enter.

You can enter values with up to two decimal places per slot. Press the **Tab** key to move one slot to the next. The total of all the slots for the Profile % must add up to exactly 100%.
8. When the distribution profile is complete, select **Save**.

To create a distribution profile by copying an existing profile:

1. In the Edit Distribution Profiles window, select a profile, and select **Copy**. A new row is added, and the selected profile information is copied.
2. Enter a new **Name** for the copied profile. Make any changes to the profile values as needed, and select **Save**.

Note

Per design (for example, in a Front Loaded Distribution Profile), if the Profile % reaches 100% before the 20th bucket (the zero is displayed at this point), and there is still unallocated budget remaining, when a Cash Flow Forecasting is linked to the Spends, the remaining unallocated budget will not be automatically distributed to the buckets with zeros.

Delete a Distribution Profile

You can delete distribution profiles if they are not currently being used in the system. If a distribution profile is being used, you can delete it if you replace it with another profile first. This is explained in the following procedure.

To delete a distribution profile:

1. Open the Distribution Profile window.
2. Select one or more profiles from the list on the left. Press the **Ctrl** or **Shift** key to select multiple profiles.
3. Select **Delete**.

- If the profiles you selected are not currently being used by the system, a warning message opens. Confirm that you want to delete the profiles by selecting **Yes**.
 - If you selected multiple profiles and one or more of them are being used by the system, an error message opens displaying the profiles currently in use.
 - To delete a profile that is currently in use, go to Step 4.
 - Close the error window.
 - You can delete the profiles that are not in use by selecting them again from the Distribution Profiles window and selecting **Delete**.
4. If you select a single profile that is being used by the system, you will be prompted to replace the profile with another profile.
- The Select a Distribution Profile window opens.
 - Click **Select**, and select a new profile from the list.
 - Select **OK**. The profile being deleted is replaced with the profile selected in this window. When the curve using the profile is refreshed at runtime, the new profile will take effect.

Edit a Distribution Profile

You can edit a distribution profile. The change will take effect in curves that use the profile the next time the curve is refreshed.

To edit a distribution profile:

1. Open the Distribution profile window.
2. On the left side of the window, select the distribution profile to edit.
 - You can edit the profile **Name**. If the profile is used by a curve, the name change will be reflected in the curve Properties.
 - You can select or deselect the **Active** checkbox. Active profiles are available for selection when choosing a default profile for auto distribution. Inactive profiles will not show up on the selection list. If you inactivate a profile and a curve is already using it, the curve will not be affected; it will still use the profile.
 - On the right side of the window, you can change the **Profile %** values. Change will be reflected in curves that use the profile when the curve is refreshed.
3. Select **Save** to save the changes. If the profile is being used by one or more curves, the profile change will take affect the next time the curves are refreshed.

Creating Cash Flow Data Sources

You can add multiple curves to a cash flow worksheet so you can view and compare curves side by side. These curves are based on the data sources you add here.

Each data source is used to identify one of the curves on a worksheet, and therefore can be used once per worksheet. However, you can reuse the data sources on different worksheets. You can create as many data sources as you need to create cash flow curves.

When you create a data source, you associate it with a Curve Type. Each curve type has a built-in logic when creating the curve using the data source. The curve types are:

- **Baseline:** Choose this to create a Baseline curve. You can choose to manually enter the cost data, or automatically pull the data from a cost column, such as a Budget.
- **Forecast:** Choose this to create a curve that helps forecast future cash flow based on actual spends records.
- **Actuals (Spends):** Choose this to plot spends data over time.
- **Portfolio Budget:** Choose original or shared option to create a Portfolio Budget curve.
- **Derived:** Choose to create a Derived curve.
- **Custom:** You can create Custom curves that you can use to enter data, or to compare against other curves. The setup is similar to the Baseline curves.

To create a Cash Flow data source:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, select **Cash Flow**, and then select **Data Sources**. The Data Sources log opens. By default, there is one Data Sources record displayed in the log. All data sources are stored in this record.
3. Select Data Sources in the log, and select **Open**. The Edit Data Source window opens.
4. Select **Add**. This adds a new row to the window.
5. Enter a **Name** for the data source. The name must be unique and not exceed 30 characters.
Press the **Tab** key to move to the next field.
6. Select a **Curve Type** from the drop-down list: **Baseline**, **Forecast**, **Actual** (or Spends), **Portfolio Budget**, **Derived**, or **Custom curves**.
You can make your selection by selecting the field and selecting from the list, pressing the first letter of your selection on the keyboard (for example, press the B key to select Baseline), or you can use the arrow keys on your keyboard to browse the list and make your selection.
Press **Tab** to move to the next field.
7. Select a **Color**.
This color will be used on the cash flow graph at runtime when a curve is generated from the data source. There are 256 colors (including "0" for black) to choose from.
Like the Curve Type field, you can select the field and select from the list; press the arrow keys to browse the colors; or, if you know the number of the color that you want, you can type it directly then press Enter.
8. To rearrange the data sources, select on the list, and select **Move Up** or **Move Down**. This is the order in which the data sources will be presented when a user creates a curve.
9. Select **OK** to save and exit the window.

Delete a Cash Flow Data Source

You can remove a data source from the list only if it is not being used by any cash flow curves.

If a data source is in use and you want to delete it, you must first delete any curves using it (these are the curves defined in the cash flow Properties window, Curves tab).

To delete a cash flow data source:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **Standards & Libraries**, select **Cash Flow**, and then select **Data Sources**. The Distribution Profiles log opens.
3. To open the Edit Data Source dialog box, double-click **Data Sources**.
4. Select the data source to delete, and select **Remove**. The row is deleted.
5. Select **OK** to save and exit the window.

Edit a Cash Flow Data Source

You can edit the data source color, which changes the color of the curves using the data source. You can also change the row order, which changes the order that data sources appear on the selection list when creating a curve.

Note

- Curve Type is not editable.
- The data source name can be changed, but use caution when doing so. If you rename a data source, the curves that use the data source will not recognize the new name, and the data will not be visible on the curves. If you change the name back to the original name, the data will appear again on the curves.

To edit a cash flow data source:

1. Open the Cash Flow Data Sources (Cashflow Datasources) window.
2. You can make changes as necessary, based on the information.
3. Select **OK** to save and exit the window.

Distributing Cost Data

When you create a cash flow curve, the system distributes cost data using the distribution method defined in the cash flow curve properties. Distribution can be either manual, or automatic from a defined profile.

In User mode, the system displays commitment curve cost data in the record transaction currency, but stores costs in project currency. Currency conversion uses the active exchange rate set.

- **Baseline curves use the exchange rate that was active at the time of record creation.**
- **Actuals curves use the exchange rate that was active at the time the money was paid.**
- **Forecast curves use the exchange rates in effect for each time period over the duration of the curve.**

If the transaction currency is different from the project currency, you can change the currency view between transaction and project currencies. You can only edit data in the transaction currency view. If there is a more recent value in the exchange rate table, refreshing the curve will refresh the cost data. You will not see the currency menu if the business process record was created in the project currency.

Manual distribution

When you select manual distribution in the curve properties, you manually enter the data for distribution in the curve details window at run time. The system preserves cost distribution and duration when you change the **From Date** (start date) of baseline, custom, and forecast curves (when there are no actuals) in project/shell, summary CBS, and CBS detail curves. In other words, if you change a cash flow curve to start on a different date than it originally did, the system shifts the curve along the timeline to reflect the new date and moves the cost data to retain the integrity of the curve. The system pegs the distribution of cost data to the **From Date**, rather than the end or **To Date**. Here is how this works when the **From Date** changes:

- If the modified curve is the same length as the original curve, the curve shifts along the timeline to reflect the new start date and all cost data remains in the curve.
- If the modified curve is longer than the original curve, the curve will shift along the timeline to reflect the new start date, but existing data is not redistributed to the additional time periods. Each time period retains its original value and additional columns have values of zero.
- If the modified curve is shorter than the original curve, the curve will shift along the timeline to reflect the new start date, and existing data is truncated at the new end date.

Auto by default profile distribution

A distribution profile lets you predefine the way you want the system to distribute cost data in User mode. You can add any number of profiles in the **Edit Distribution Profiles** window.

The left side of the window contains:

- A list of previously created distribution profiles. Initially this list is empty.
- The Active checkbox, which controls whether the profile is available for selection for a curve.

The right side of the window contains:

- Graph: The graph is a graphical representation of the profile % that you enter over the duration %.
- Duration %: These are the x-axis units of the graph. The x-axis starts at zero (0), with another 20 slots, equally distributed up to 100%.
- Profile %: Starts at 0, with 20 remaining slots to enter the profile distribution percent values. You will enter incremental values in these slots. The total value of the profile % must add up to 100%. You cannot enter negative numbers in these slots. The values you enter will determine the shape of the curve, and distribution of the data.

By default, when you create a distribution profile, the graphical display will be a linear distribution (5% is entered in each of the 20 data slots).

Following are some distribution profile examples.

Curve Example	Profile %																			
Linear	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
S-Curve	0.5	0.5	1.5	1.5	4	4	7.5	7.5	11.5	11.5	11.5	11.5	7.5	7.5	4	4	1.5	1.5	0.5	0.5
Back Loaded	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Front Loaded	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

Cash Flow Curve Templates

You can create cash flow curve templates that can be used to create cash flow curves in projects and CBS-code based shells. If you are using company-level cash flow, you can create roll-up curve templates. See [Create Roll-up Templates](#).

Template creation methods are manual or involve copying an existing one. After creating a template, you can set refresh frequency and activate or deactivate curves.

Creating and setting up a template is essentially the same as setting up the curves manually in a project/shell. The major difference is you cannot select individual records in the template; these must be chosen from within the projects/shells. See [Cash Flow Curves](#).

The detail curve creates a worksheet in the project/shell that can include several curves. You can create detail curves and detail curve templates at the following detail levels:

- **Cash flow by project or shell:** You can track the costs associated with an entire project/shell over time.
- **Cash flow by CBS:** The creation of a CBS detail curve is similar to cash flow by project/shell. Use this option if cash flow needs to be tracked at the CBS level as opposed to the project/shell level, which lets you plot cash flow curves by specific CBS codes, or all codes, in the project/shell.
- **Cash flow by Summary CBS:** The creation of a Summary CBS detail curve is very similar to cash flow by CBS. Use this option if cash flow needs to be tracked by summary CBS codes. To select this option, the project/shell cost sheet must use a tree structure—and therefore has summary CBS codes—rather than a flat structure. If you select this option, the system sets the **Summary CBS Level to 1** by default. You can select another level, based on what is available in the Cost Sheet.
- **Cash flow by commitment:** This option lets you plot and analyze cash flow data for an entire commit record (including base commit, any change commits, and related invoices). You can choose the specific business process commitment record within the project/shell, such as a purchase order or contract, and track the cost information over time.

Note

- You can set up the automatic creation of a cash flow curve when a base commit record is created and completed or reaches a particular step. This is done in the BP Setup for the business process. For more information, see [Setting Up Auto-Creation of Cash Flow Curves from Contracts](#).
- You can define views for each cash flow detail level to include in the template. You can also select one view per detail level to function as the default view. For more information, see [Defining Global Cash Flow Views for Inclusion in Templates](#).

To create a cash flow detail level curve in a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, do one of the following:
 - To create a detail curve in a project/shell template, select **Templates**. Open the project/shell template. In the left Navigator, select **Cost Manager**, and then select **Cash Flow**. This cash flow model can be copied during project/shell cloning.
 - To create a template, select **Standards & Libraries**, select **Cash Flow**, and then select **Templates**. This is a template users can select at run time. This option is available in Classic view only.

The Cash Flow log opens.

To create a cash flow detail level curve in a template from Templates:

1. From the toolbar, select **+ Create**.
2. In the **New Cash Flow Worksheet** window, fill out the **General** block of the form by defining the name, description, and detail level.
3. Configure the additional options as needed:
 - **Summary CBS Level**
 - **Filter CBS Codes or Filter Summary CBS Codes**
To refine the list of codes included as part of the template, select **Manage Filters**. (The names of the subsequent pages and options changes based on whether you are filtering CBS codes or Summary CBS codes.) On the **Filter [Summary] CBS Code** page, select **Add [Summary] CBS Code**. On the **Cost Code Picker** page, select the applicable codes, and then select **Add & Add More** if you want to save your changes and add additional codes or select **Add & Close** to save your changes and return to the previous page. To save the selected cost codes as part of the template, select **Done**.

After you access **Manage Filters**, the system lists the filtered codes, along with the CBS Path, Code Name, and Cost Type. You can use the Delete option in the Actions menu to delete codes.
 - **Rollup cashflow data to company?**
 - **Time Scale:** Set the period type, choose by month or by year, and set the format of the curve dates. If you select *Financial Period*, for a project/shell template, you can define the **Cutoff Spends** and the snapshot date in the **Period Close Settings** for cash flow curves by Project, by CBS, and by Summary CBS for the shell templates.
4. Add curves in the right pane. Select a curve type from the drop-down list and fill out all fields.
5. Select **Save & Close** when finished.

To create a cash flow detail level curve in a template from Standards & Libraries (Classic view):

1. From the toolbar, select **New**. The Properties window opens.
2. Fill out the following tabs, and select **OK** when finished.
 - **General tab:** Define the name, description, detail level, time scale and period close settings.
 - **Curves tab:** Define individual curves (Baseline, Forecast, Actual (or Spends), Portfolio Budget, Derived, and Custom curves) that will be part of the group of curves that make up the cash flow detail curve.
 - **Filters tab:** Limit the cash flow data on your curve to a particular set of CBS codes or (if the cost sheet is tree structure) summary CBS codes. If you do not specify a filter, all codes will be used for the data.
 - **Options tab:** Define the format to use for the numbers displayed on the cash flow worksheet.
 - **Schedule tab:** Enable automatic refresh of the cash flow curve, and set the refresh schedule.
 - **Summary tab:** A Summary Cash Flow Curve displays selected cash flows from your project.

Create Roll-up Templates

Use roll-up curves in the company-level Cost Manager to roll up cash flow data from all projects/shells in which cash flow is being used. You can create roll-up curve templates and use the templates to create the roll-up curves.

To create a roll-up template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, select **Cash Flow**, and then select **Templates**. The Cash Flow Standard Templates log opens.
3. Select **New**. The Properties window opens in the General tab.
4. In the **General** tab, set the **Rollup Status** to Active. If the status is active, data can be rolled up from project/shell cash flow curves.

The rest of the process is similar to the setup of other detail curves through the **Standards & Libraries** grouping node. See [Cash Flow Curve Templates](#).

Setting Up the Rules Engine

Rules constrain the sending of cost-type business process records, and affect making changes to Cost and Funding sheets. That is, they give some control over costs by helping you to enforce cost constraints. For example, you could create a rule that prevents invoices from exceeding a contract budget.

As the administrator, you can create rules and rule templates. Rules can be created at the project/shell level or company level. Rule templates can be created for project/shell-level rules.

You will be using a formula to create a rule, much as you use formulas to create field values.

About Rules

A rule is triggered when a user attempts to "send" a business process record to the next step whose status activates the rule. For example, the rule may be designed to activate when a record gets to the Pending or Approved status. A rule can prevent the record from proceeding to the next step if doing so will violate the rule. Rules affect how users can work with:

- Funding sheets (at project/shell or company level)
- Project/Shell Cost sheets
- Schedule of Values

When you create a rule, you can designate specific groups or users who can override the rule exception.

When a rule violation occurs, the system displays a "Rule Exceptions" window.

If the user has override control, they can select Override to ignore the rule exception, or Cancel to accept the rule and remain on the step. If the user selects Override, the system will ignore the rule exception and send information to the audit log about the override transaction.

Rule exceptions can be triggered by:

- Adding or copying a line item on the Cost Sheet

- Copying data from one column to another on the Cost Sheet
- Entering data directly into a cell on the Cost Sheet
- An email action that sends cost data to the sheet
- An integration transaction that sends cost data to the sheet
- I-Step and S-Step business process auto-creation
- A business process record that rolls up cost data to the sheet

Note

The system does not display a Rule Exception window if the rule validation is triggered from an email action, or integration. If the user has override control, the system will assume the user wants to override the rule exception and sends the override information to the audit log.

About Control Sources and Levels

When you create a rule, you choose the control source (that is, whether the rule will affect cost or fund transactions), and the rule level (what the rule will enforce).

Control Source

In projects/shells, you can create rules for cost (choose **Project Cost** as the control source) or funding (choose **Project Fund** as the source). At the company level, you can create rules for funding (the control source is **Company Fund**).

Note

"Commit" refers to a commit business process, such as a purchase order, and also would include change commit business processes if specified in the rule; additionally, the term "budget" can mean any cost sheet data source being validated against with the rule, which is usually, but not necessarily, budget-related.

Rule Levels

Project Cost: Rules with Project Cost as the source provide validation to business processes that affect project/shell cost sheets. Rule levels are:

- **Per CBS:** These rules provide control per CBS code across the project/shell budget. For example, if you have an assigned budget amount for specific CBS codes, you can create rules that check all commit business processes (and change commits if specified) to verify that those assigned budget amounts, per CBS code, are not exceeded.

Note

If a business process record has several line items, even if only one of the line items will violate the rule, the entire record will be rejected.

- **Per Total for Entire Project:** This rule looks at the total, cumulative amount of commit business processes and verifies the total against the project/shell budget (or another parameter that you choose). This type of rule can ensure that the project/shell budget is not exceeded, but does not verify specific CBS code or funding amounts.
- **Per Fund within each CBS:** Applicable if the project/shell includes funding at the CBS level. The rule will validate the amount being charged on the commit business process record for each CBS code against the assigned fund amount per CBS, as specified in the fund information on the cost sheet.
- **Per CBS within each Commit:** Related to SOV. For example, the rule can validate that the total amount of a purchase order and related change orders will not exceed a certain amount for a specific CBS code.
- **Per selected Summary CBS Codes:** Lets you select one or more summary CBS codes on which to enforce the rule. This option is applicable when the cost sheet has a tree structure; cost sheets with flat structures do not have summary codes. You can choose to enforce the rule on each summary code individually, or on the total of the selected codes. Because you must select summary CBS codes from the cost sheet for this rule, this option is not available in rule templates; it is available for rules within project/shell templates, and within projects/shells.
- **Per selected CBS Codes:** Lets you select one or more "leaf" level CBS codes (that is, codes that are not summary codes) on which to enforce the rule. You can choose to enforce the rule on each code individually, or on the total of the selected codes. This option is applicable for cost sheets with a tree or flat structure. Similar to the previous option, this is available in rules within project/shell templates, and within projects/shells, not in rule templates.

Project Fund: This control source option provides validation to business processes that affect project/shell funding sheets. Rule levels are:

- **Per Fund:** These rules provide control per fund per project/shell, similar to "Per CBS" above.
- **Per Total for Entire Project/Shell:** Provide control over entire funding amount for the project/shell, similar to cost rules.

Company Fund: Company level rules can be created for company funding sheets:

- **Per Fund:** These rules provide validation against the total amount of each fund, regardless of project/shell distribution.
- **Per Total of all funds:** Provides validation for the total of all funds available to the company.

Access a Rule or Rule Template

To access a rule or rule template:

Rules can be created and accessed in the following logs in **Admin** mode:

- Go to the **Company Workspace** tab. In the left Navigator, select **Company Workspace**, and then select **Rules**.
- Go to the **Company Workspace** tab. In the left Navigator, select **Templates**, and then select **Rules**.
- Go to the **Company Workspace** tab. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**. In the left Navigator, select **Rules**.

- Go to the shell tab. In the left Navigator, select **Rules**.

Creating Rules and Rules Templates

All new rules are created in a similar way. You can create rules and rules templates manually or by copying from another rule or template.

Rules can also be added to existing active and on-hold projects/shells by updating ("pushing") them from a project/shell template using Update Projects or Update Shells.

Note

To start using a rule after it has been created, it must be validated and activated. After creating rules, see [Validating and Activating Rules](#).

Create a Rule Template

You can create a rule template, or a rule within a project/shell template. By default, rule templates remain inactive; the Validate, Activate, and Deactivate buttons on the toolbar are disabled. Rules within project/shell templates can be validated and activated.

You can create a rule manually or by copying an existing rule. If you create a rule within a project/shell template, the rule can be "pushed" to existing projects/shells.

To create a rule template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, do one of the following:
 - Select **Company Workspace** and then select **Rules**.
 - Select **Templates** and then select **Rules**.
 - Select **Templates**, select **Shells**, select the applicable shell, open the applicable template, and then select **Rules**.

Note

At the Template level with Shells, you can only create rules for CBS shells, not generic shells.

3. From the toolbar, select **New**.
4. In the **Create a New Rule** dialog box, select the **Control Source** and **Rule Level**, and then select **OK**.
For details on choosing the source and level, see [About Control Sources and Levels](#).
5. In the **Edit Rule** dialog box, use the information in the first table below to complete the fields on the **General** tab.
6. Select the **Rule** tab, and complete the fields using the information in the second table below.
In project/shell templates, if you chose "Per selected CBS Summary Codes" or "Per selected CBS Codes" as the rule Level, the CBS Codes tab appears in the Edit Rule window. For guidance in selecting codes, see [Select CBS Codes or Summary Codes](#).

7. Select **OK** to save and close the Edit Rule dialog box.

General Tab

In this field:	Do this:
Name	Enter a name for the rule. Note Avoid using special characters, such as < or >, in the name of the rule. If you use special characters, the name is truncated in or excluded from the error description when validation is run. For example, if the rule name is <rule 1>, this information is omitted from the Description field in the Errors and Warnings window when validation is run and an error is identified.
Description	Enter a description of the rule.
Control Source	The system displays the control source you chose in this field.
Rule Level	The system displays the rule level you chose in this field.
Status	The system displays the current status of the rule.
Users/Groups who can override	(Optional; appears only at the project/shell templates level.) This option is available only for the following rule levels: • Per selected summary CBS codes • Per selected CBS codes Click Select, and select the users or groups that are allowed to override this rule at runtime. If you select this option, the specified users/groups should be able to override a rule failure condition during a workflow. The system will display the name(s) of the overriding user(s) and any comments in the Audit Log. Note If you use this option, users/groups can override this rule, even if the data is not valid. Also, the users/groups specified in this option are added to the project/shell if they do not exist there.

In this field:	Do this:
Notify Users/Groups when overridden	(Optional; appears only at the project/shell templates level.) Click Select , and select the users or groups that should be notified if this rule is overridden.

Rule Tab

In this field:	Do this:
Limit Expression	This defines the Upper Limit that the rule validates against and is static. For example, for cost rules, this might be the Assigned Budget, or it can include the sum of several budget-related data sources on the cost sheet. Select Formula. In the Formula Creation dialog box, the Data Source list includes all available cost sheet data sources for cost-related rules or funding sheets data sources for fund-related rules. This is the value on the left of the Condition. Pending positive values are not considered.  Note The system identifies the non-terminal documents as pending.
Include positive pendings in calculation	Deselected by default. When this option is selected by the user, the system considers positive values from non-terminal records in the Limit Expression formula calculation. When this option is deselected by the user, the system ignores positive values from non-terminal records in the Limit Expression formula calculation.
Condition	The option "greater than or equal to" is the only selection available. Rules always check that the "Upper Limit" (Limit Expression) is greater than or equal to the amount calculated by the Data Expression.
Data Expression	This is what is being validated. For example: Purchase Order (Pending) + Purchase Order (Approved) + Change Commit (Pending) + Change Commit (Approved) Select Formula. In the Formula Creation dialog box, the Data Source list includes all available cost sheet data sources for cost-related rules or funding sheets data sources for fund-related rules. This is the value on the right of the Condition. Pending negative values are not considered.

In this field:	Do this:
Include negative pendings in calculation	Deselected by default. When this option is selected by the user, the system considers negative values from non-terminal records in the Data Expression formula calculation. When this option is deselected by the user, the system ignores negative values from non-terminal records in the Data Expression formula calculation.
Show this message when condition is not met	This field is required. Enter a message to display to users if the rule condition is not met.

Select CBS Codes or Summary Codes

To select CBS codes or summary codes:

1. In the Edit Rule window, select the **CBS Codes** tab. (This tab is available if you chose "Per selected CBS Summary Codes" or "Per selected CBS Codes" as the rule Level.)
2. Select **Add**. The CBS Picker opens.
 - If you chose "Per selected CBS Summary Codes," the picker displays the summary CBS codes on the sheet. This is only applicable if the project/shell cost sheet uses a tree structure. Cost sheets with flat structures do not have summary CBS codes.
 - If you chose "Per selected CBS Codes," the picker displays the "leaf" CBS codes (individual, non-summary codes). This is applicable for both tree and flat cost sheets.
3. Select one or more codes from the picker, and click **Select**.
To locate the CBS codes you need, you can select **Find** in the CBS Picker. For tree structure cost sheets, you can also select **Expand** or **Collapse** to help you navigate the code structure.

After you select the CBS codes, they are listed in the CBS Codes tab. You can add as many CBS codes as needed. At runtime, the rule will be applied only to the CBS codes selected.

Note

- Summary CBS codes must all be at the same summary level (that is, the same indent level).
- The query conditions you define with the BP data pickers will only return data sourced from the shell you specify. The query will not return values from other shells or projects.

4. For **Validation**, choose one of the following:
 - **Validate total of selected rows**: the system will calculate the sum of the selected CBS codes and then apply the rule to the total
 - **Validate selected rows independently**: the system will apply the rule to each selected CBS code individually
5. To remove a CBS code from the list, select it, and select **Remove**.
6. Select **OK** to save and close the Edit Rule window.

Note

- If you add a CBS code or summary code to this list and it is later removed from the cost sheet, the rule will not be affected. The code will still appear on the CBS Codes tab. At runtime, the rule engine will ignore the code that was removed from the cost sheet. Similarly, in a tree structure, if a summary code is changed to a leaf code (or conversely) after adding it to the CBS Codes tab, at runtime, the rule engine will ignore the code that was changed and not create an error.
- Summary level cost codes cannot be selected for line items in Cost Business Process records, as this may result in data inaccuracies. Additionally, ensure that summary level cost codes are not associated with cost allocation lines when creating or updating commits of Summary Payment Application records via any method, including UI, REST API, or auto-creation.

Create a Project or Shell Rule

You can create a rule in a project/shell manually or by copying a rule template or existing rule.

In addition to these procedures, rules can also be added to existing active and on-hold projects/shells by updating ("pushing") them from a project/shell template using Update Projects or Update Shells.

To create a project/shell level rule:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Rules**.
3. Select **New**.
4. Follow the procedure outlined in [Create a Rule Template](#).

To create a rule by copying a rule template:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Rules**.
3. Select **Copy**, and select **Template**. The Copy from Rule Template window opens.
4. Select a template from the list, and select **Copy**. The Edit Rule window opens. You may make edits to the Edit Rule window if necessary. For example, by default, the Name will display as "Copy of (name of rule template)," which you may want to change.
5. Select **OK**. The new project/shell rule will be added to the project/shell Rules log.

To create a rule by copying an existing rule:

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Rules**.
3. Select a Rule from the log.
4. Select **Copy**, and select **Rule**. The Edit Rule window opens. You may make edits to the Edit Rule window if necessary. For example, by default, the Name will display as "Copy of (name of the copied rule)," which you may want to change.
5. Select **OK**. The new project/shell rule will be added to the project/shell Rules log.

Create a Company Rule

At the company level, you can create rules for the company funding sheet. You can create rules that help you manage you manage each fund, or the total of all funds.

To create a company level rule:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Workspace**, and then select **Rules**.
3. Select **New**. The **Create a new rule** window opens.
4. Select the **Control Source**: Company Fund.
5. Select the **Rule Level**: Per Fund or Per Total of all funds.
6. Select **OK**. The Edit Rule window opens.
7. Complete the Edit Rule window as described in [Create a Rule Template](#), and select **OK**.

Validating and Activating Rules

Rules must be active before they can take effect. Before activating a rule, they must first be validated to make sure there are no conflicts associated with it. Rules within projects/shells as well as within project/shell templates can be validated and activated. Rule templates cannot be activated or validated.

Validate a rule

You can validate rules in project/shell- and company-level rules. You can also validate rules in project/shell templates to help ensure that they will work in the project/shell, even if you do not immediately activate them. Validation is not available in rule templates, because part of the validation process involves verifying that the cost or fund sheet is set up and any referenced business processes are active.

It is good practice to validate a rule before attempting to activate it. If you try to activate a rule directly, the system will first validate it anyway, but if there is a conflict, you will simply see an error and may not be able to assess what the issue is. By validating first, the system provides more information if the validation fails.

To validate a rule:

1. From the **Rules** log, select a rule.
2. From the toolbar, click **Validate**.
The Validation Results window opens. If the validation failed, the errors are listed in the window. Edit the rule as necessary and revalidate.

Note

As described in [Create a Rule Template](#), if you used special characters in the rule name, the name is truncated in or excluded from the error description when validation is run.

Activate or Inactivate a rule

You can activate rules in projects/shells, and company level rules. You can also activate rules in project/shell templates. In this way, the rules in the projects/shells that are created from these templates will be active as soon as the project/shell is active.

You cannot activate a rule template.

To activate a rule:

1. Select one or more rules in the Rules log. Be sure that the rules have passed validation.
2. Select **Activate**.

To deactivate a rule:

1. Select one or more activate rules in the Rules log.
2. Select **Deactivate**.

Manage Rules

Rules can be accessed in the following logs in **Admin** mode:

- Go to the **Company Workspace** tab. In the left Navigator, select **Company Workspace**, and then select **Rules**.
- Go to the **Company Workspace** tab. In the left Navigator, select **Templates**, and then select **Rules**.
- Go to the **Company Workspace** tab. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template]. In the left Navigator, select **Rules**.
- Go to the shell tab. In the left Navigator, select **Rules**.

Rules can also be updated in active and on-hold projects/shells by updating ("pushing") the changes from a project/shell template using Update Projects or Update Shells.

To edit a rule:

1. Select the rule in the Rules log. If the rule is active, you must deactivate it before editing.
2. Select **Edit**. The Edit Rule window opens.
3. Make edits as necessary, and select **OK**.

To delete a rule:

Select a rule from the Rule Log. Select **Delete**, and then select **Yes** when prompted to confirm.

To view a rule audit log:

1. Select a rule from the Rules log.
2. From the **View** menu, select **Audit Log**. The Audit Log opens, listing each event associated with the rule. The date and time stamp of each event reflect users' current time zone as set in their User Preferences.
3. In the Audit Log, double-click a listed event to view the audit record detail, which details the action taken. The details also include the user's current time zone for reference.

To print the audit log:

1. In the Audit Log, select **Print** . A PDF file is created.
2. Do one of the following:
 - Select **Open** to open the file in Adobe Acrobat Reader. From the Reader window, you can view, save, or print the file.
 - Select **Save**. In the Save As window, navigate to the location in which you want to save the PDF file. Open the file in Adobe Acrobat Reader, select **File**, and then select **Print** to print.

Setting Up a Generic Cost Manager

You can define a Generic Cost Manager to capture cost-related activities for a Generic Shell. These include costs like:

- Rent
- Lease payments
- Landscape care
- Building maintenance and repair
- Remodel of building interiors

With this manager, you can capture and view cost transaction information based on a time scale, such as quarterly or yearly. Each shell can have one Generic Cost Manager.

The Generic Cost Manager uses specific Generic Cost business processes and business processes with the type Line Items with Multiple Codes as data sources.

Before you begin. The Generic Cost Manager and the Generic Cost Manager Attribute Form must first be designed in uDesigner.

Step 1: Set the permissions for importing the Generic Cost Manager.

Step 2: Import the Generic Cost Manager.

Step 3: Import and deploy the Generic Cost Manager Attribute Form.

Step 4: Set template permissions.

Step 5: Create the Generic Cost Sheet template at the company level.

Step 6: Create a Generic Cost Sheet.

Step 7: Work with Generic Cost BPs.

Step 8: Set up the Commitment Summary Template.

Note

The name of the Generic Cost Manager you will work with is determined by the name given to it in uDesigner. For documentation purposes, the manager is referred to as the Generic Cost Manager.

Setting Generic Cost Manager Permissions

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Templates**, expand **Configurable Modules**, and then select **Generic Cost Manager**.
The permissions are:
 - **Modify**: Allows the user to import configurable modules from uDesigner
 - **View**: Allows the user to view configurable modules imported from uDesigner

Import Generic Cost Manager

To import an asset class into Unifier **Production** environment, see [Importing Configuration Packages](#).

Import Generic Cost Manager Attribute Form

To import and deploy an attribute form into Unifier **Production** environment, see [Importing Configuration Packages](#).

Creating a Cost Sheet Template for a Generic Manager

You can create a Generic Cost Sheet template to use with the Generic Cost Manager.

Create a Generic Cost Sheet template

The name of the template is based on whatever name was given to the Generic Cost Manager. You create this template at the company level, and use it in shells that are of the type Generic.

To create a Generic Cost Sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Configurable Modules**, and then select **Generic Cost Manager**.
3. Select **New** to create a new Generic Cost Sheet template. You can create multiple templates. The Properties window displays.
4. In the **General** tab, enter general information for the template:
 - a. Enter a unique **Title**, which is used to identify the template in the log, and when creating a new Generic Cost Sheet from the template.
 - b. Enter an optional **Description** for the template.
 - c. Choose a default display mode for the sheet.
 - If you choose **Flat**, the cost sheet will display the codes (rows) in a flat structure, with no indented rows. This is useful if you want to display all codes at once.
 - If you choose **Tree**, you have the option of creating indented, nested rows, which can be collapsed into summary, or grouping, rows. This is useful if you will be creating a large amount of rows that can be grouped into categories. You can check **Expand all codes** to expand the row structure by default.
 - d. Choose a **Default View**. The choices are:

- Current Shell
 - Current Shell and sub-shells
 - Subshells
5. In the **Segments** tab, define the segments of the cost codes that will be created on the sheet by choosing the **Segment Sources**. The segment sources are those that were defined in uDesigner. After you select **Apply**, you cannot add or remove any of the segments. If you want to use different segments, you must create a new template.
 6. Select **Apply** to save changes, or **OK** to save and exit the window.

Structure a Generic Cost Sheet template

After you create the template, you can define the structure by adding rows and columns.

To add rows to a Generic Cost Sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Configurable Modules**, and then select **Generic Cost Manager**.
3. Select a Generic Cost Template.
4. Select **Structure**. The Template Structure Setup window opens.
5. Select **Add Rows**. The Generic Cost Code Details window opens.
6. To form cost codes (rows), click **Select** next to the **Account Code** field.
7. Enter the cost code segments, and select **OK**.
8. (Optional) Enter a code name for the account code.
9. Select a status (**Active** or **Inactive**).
10. Select **Add** to add the row and then continue to add rows, or select **OK** to exit.

To add columns to a Generic Cost Sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Configurable Modules**, and then select **Generic Cost Manager**.
3. Select a Generic Cost Template.
4. Select **Structure**. The Template Structure Setup window displays.
5. Select **Columns**. The Cost Sheet Columns window opens.
6. Select **New**. The Column Properties window opens.
7. Complete the fields in the Column Properties window as described in the table below.
8. Select **OK** when you are done with the column properties.

In this field:	Do this:
Name	Enter a column name. The name you choose will appear as the column header on the sheet. If you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.

In this field:	Do this:
Datasource	Choose a data source. All columns must be associated with a data source. The data source that you choose will determine which of the following options are available. The types of Data sources available are: Single Datasource: These values roll up from business processes that have these attributes: Level: Project/Shell Type: Cost Sub-Type: Line Items with Multiple Codes Configurable Manager: <name of Generic Cost Manager> Logical Datasource: Generic Cost Manager (1-25).
Entry Method	Choose an entry method. This is applicable for logical data sources. Manual Entry: Users enter values by selecting the cell and entering values directly into the cell. Formula: Values are calculated based on a specified formula entered for the column. Formulas can include the values of other columns. Select Create to create the formula.
Data Format	Choose a data format. Applicable for Manual Entry or Formula columns: Show as percentage: Display the data in percentages. Decimal Places: Number of decimal places to display.
Display Mode	Choose a display mode. Refers to whether the column is displayed on the cost sheet. Show: Default; indicates that column will display by default on the cost sheet to all users with at least "view" permission for the cost sheet. Hide: Hidden columns are active but not displayed on the cost sheet. Hidden columns can be accessed by users with "create" permission on the cost sheet. Total: Choose to designate the content of the Total row of the column. Default is Blank. You can choose Sum of All Rows or Use Formula Definition. Average: Display the average row of the column.
Total	Choose how the total is displayed. Determines what will display in the "Total" (bottom) row for the column: Blank: The total of this column is not applicable and will not display on the cost sheet. Choose this column for percentage columns and other columns where it does not make sense to display the sum total. Sum of All Rows: The sum total of the column values is displayed. Use Formula Definition: For formula columns; the formula will be applied to the "Total" row in the same way it is applied to other rows in the column.
Average	Choose how the average is displayed. Blank Avg of All Rows
Column Position After	Choose the column position. The new column will be inserted after the column selected.

Setting Generic Cost Sheet Template Permissions

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Templates**, expand **Configurable Modules**, expand **Generic Cost Manager**, and then select **Generic Cost Sheet**.

The permissions are:

- **Create:** Allows user to create a new Generic Cost Sheet template.
- **Modify Properties:** Allows the user to modify the template properties.
- **Modify:** Allows the user to modify an existing template.
- **View:** Allows the user to view templates.

Creating a Generic Cost Sheet

You create a Generic Cost Sheet in the same way you create a standard Cost Sheet. See [Create a Company Cost Sheet](#) for details. Remember that the Generic Cost sheet can only be added to a generic shell, not to a project.

Setting Up the Commitment Summary Template

When a Generic Cost BP of the Base Commit type reaches Terminal status, it will create a record in the Commitment Summary sheet, which tracks commits in the context of a shell. When subsequent Change Commits and General Spend Generic Cost BPs that are associated with the original Base Commit, BP will update the Base Commit record on the Commitment Summary sheet.

Create a Commitment Summary Sheet Template

To create a Commitment Summary sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Commitment Summaries**.
3. Select **New** to create a new Commitment Summary sheet template. You can create multiple templates.
4. In the **General** tab, enter a unique **Name** and an optional **Description**.
5. In the **Options** tab, enter the following column names: **Ref**, **Cost Code**, **Code Name**, **Breakdown**, and **Description**.
Depending on design in uDesigner, some columns may not display in the Commitment Summary sheet.
6. Select **OK**.

To add columns to a Commitment Summary sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Commitment Summaries**.

3. Select a Commitment Summary sheet template.
4. Select **Columns**. The Columns Log opens.
5. Select **New**. The Column Properties window opens.
6. Complete the fields in the Column Properties window as described in the table below.
7. Select **OK** when you are done with the column properties.

In this field:	Do this:
Name	Enter a column name. The name you choose will appear as the column header on the sheet. If you leave the Name field blank, the selection you make in the Datasource field will automatically populate the Name field.
Datasource	Choose a data source for the column. The data source that you choose will determine which of the following options are available. The types of Datasources available are: Single Datasource: These values roll up from business processes that have these attributes: • Sub-Type: Line Items with Multiple Codes • Classification: Base Commit, Change Commit, or General Spends Logical Datasource: • Commitment Cost 1 to Commitment Cost 25 • Commitment Remaining Balance
Entry Method	This is applicable for logical data sources. • Manual Entry, Direct entry into cell: Users enter values by selecting the cell and entering values directly into the cell. • Formula: Values are calculated based on a specified formula entered for the column. Formulas can include the values of other columns. Select Create to create the formula.
Data Format	Choose the data format: • Currency: Formats data in a currency format with a comma (,) separator. • Percentage: Formats data as a percentage (%).
Display Mode	Choose a display mode. This refers to whether the column is displayed on the cost sheet. • Show: Default; indicates that column will display by default on the cost sheet to all users with at least "view" permission for the cost sheet. • Hide: Hidden columns are active but not displayed on the cost sheet. Hidden columns can be accessed by users with "create" permission on the cost sheet.
Column Position After	Choose the column position. The new column will be inserted after the column selected.
Allow sub-breakdown with validation	Select to be able to manually enter values against breakdowns in lines created on the sheet through Base Commit and Change Commit.

Create a Commitment Summary Sheet

To create a Commitment Summary sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell instance]**.
3. In the left Navigator, select **Cost Manager**, and then select **Commitment Summaries**. The Commitment Summaries log opens.
4. From the toolbar, select **Create Structure**. The Select Template window opens.
5. Choose a template, and select **OK**.
6. Select **Columns** to add columns.
7. To edit the sheet properties, select **File**, and select **Properties**.
8. In the **General** tab, enter a unique **Name** and an optional **Description**.
9. In the **Options** tab, enter the following column names: **Ref**, **Cost Code**, **Code Name**, **Breakdown**, and **Description**.
Depending on the design in uDesigner, some columns may not display in the Commitment Summary sheet.
10. Select **OK**.

Update a Commitment Summary Sheet from a Template

To update a Commitment Summary sheet from a template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell instance]**.
3. In the left Navigator, select **Cost Manager**, and then select **Commitment Summaries**. The Commitment Summaries log opens.
4. Modify the Commitment Summary.
5. From the toolbar, select **Update Shells**. The Update Shells window opens.
6. Choose the shells to update, and select **OK**.

Setting Up the Document Manager

A document attribute form and folder attribute form can be designed in uDesigner. These are used as the Properties window for documents and folders in the project-, shell-, and company-level Document Manager, which allows you to specify the fields that you want to associate with folders and documents (these are reportable).

Step 1: Import and deploy Document Manager attribute forms. This is an optional step. If you do not import these forms, default forms will be used for document and folder properties.

Note

Configuration of the Data Picker and Data Elements (and when applicable: Unique and Auto Sequence settings) must be done in uDesigner. For more information, see Document Manager Overview.

Step 2: Create a folder structure template. This can be used to create the folder structures in the Document Manager at the project/shell and company level.

Step 3: Lock the folder structure. This is an optional step. This locks the first-level folder structure in User mode, which prevents users from creating or editing first-level folders, allowing you to maintain a consistent structure across projects/shells and at the company level. Users can still add or edit subfolders. You can unlock the folder structure later for editing if necessary.

For security, the Company Administrators can specify the list and size of files that can be uploaded by users and per company policy. For more information, see Updating Company Settings on the Security Tab.

Document and Folder Properties

Users have the ability to create attribute forms to customize the document properties and folder properties in the Document Manager, using the uDesigner. The data elements on the Properties window are fully reportable through user-defined reports.

The project documents, shell documents, and company documents log columns can also be customized through uDesigner, as well as the find function for searching on document and folders properties. You can import multiple document properties attribute forms and multiple folder properties attribute forms and use the project/shell options to identify which attribute form should be used for the Document Manager. For details about creating Document Manager attribute forms, see Document Manager Overview.

Note

If you import a Folder Structure Template or the Structure and Properties of a specific item and there are fields that are enabled for auto-sequencing in the template or properties, the system applies the auto-sequencing of formulas and other values. This setting is applied to existing documents within the selected folder and to business process (BP) records generated from the updated folder or document.

Permissions

The Document Manager permissions are set at the module level through the Permissions window or Access Control. Permissions for the project/shell-level and company-level Document Manager are set separately. When permission is granted to view the Project Documents, Shell Documents, or Company Documents node, this only grants the user the ability to access the module and potentially to view documents stored there. Users must also be granted specific permission to create, modify, or view specific documents and folders in User Mode. This can be done by the folder or document's owner, or an administrator with full access permissions. Permissions at the folder or document level can be inherited from permission settings in the parent folder.

A user granted full access permissions will have access with full permissions to create, modify, or delete any folder or document, regardless of the permission setting at the folder or document level. In addition, a user who is the owner of a folder or document will have full access permissions on that folder or document. Any folder or document level permissions are ignored. However, if the owner transfers ownership to another user, the permission setting for the former owner will be determined by the folder or document level permission setting.

A user designated as the document administrator should have permission to create and maintain folder structure templates. Optionally, it is useful for the document administrator to have full access permissions granted for the Project Documents, Shell Documents, Company Documents, and Unpublished Documents nodes.

Categories

Categories are controlled by the data definition **SYS Category**. This is managed like other data definitions. Category values are added as the data set.

When entering document or folder properties in the Document Manager, a category can be defined by choosing from the values in the data set. Category information is reportable in user-defined reports.

Importing Document Manager Attribute Forms

You can customize the document and folder properties by creating Document Manager Structure (DMS) Attribute Forms in uDesigner. Ensure that you have checked for errors and changed the status to complete in uDesigner.

When deploying the attribute forms, the following will be updated with the customized interface designed in uDesigner:

- Project Documents log

- Shell Documents log
- Company Documents log
- Search by Properties Criteria

You can have only one Document and Folder Attribute Form per company, which will be used for the document and folder properties in the company-level Document Manager and across all projects/shells.

To import and deploy a Document Manager Attribute Form into the Unifier **Production** environment, see [Importing Configuration Packages](#).

Setting Document Manager Administration and User Permissions

To grant auto-sequencing configuration permission:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Configuration**, expand **All**, and then select **Document Manager**. This opens the Module Permission Settings window for the Document Manager.
4. Select **Add** to assign permissions to a user that is not in the permission list, or select **Modify** to edit the permissions of a user that is already in the permission list. The Permission/Access Control window opens.
5. Select **Add Users/Groups** to open the User/Group Picker.
6. Select users to add, and select **Add**. Select **OK** when finished.
7. In the Permission/Access Control window, select the desired users and select or deselect the **Configure** checkbox in the Permission Settings block.
8. Select **OK** when finished.

To grant User mode permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **User Mode Access**, and then expand:
 - **Company Workspace**, expand **Document Manager**, and then select **Company Documents** or
 - **Projects/Shells**, expand **Document Manager**, and then select **Documents**.
4. Select **Add** to assign permissions to a user that is not in the permission list, or **Modify** to edit the permissions of a user that is already in the permission list. The Permission/Access Control window opens.
5. Select **Add Users/Groups** to open the User/Group Picker.
6. Select users to add, and select **Add**. Select **OK** when finished.
7. In the Permission/Access Control window, use the checkboxes to assign the following permissions to selected users:
 - **Full Access**
 - **Create**
 - **Organize**

- **View**

8. Select **OK** when finished.

For Unpublished Documents, the permissions are **Publish**, **Download**, **Open**, and **View**.

For Document type business process permission settings, refer to the *Unifier Data Reference Guide*.

Working with Folder Structure Templates

You can standardize the setup of the Document Manager across your projects/shells and at the company level by creating folder structure templates. These templates let you create the folders and sub-folders that you can then import into the company Document Manager, or into any project/shell or project/shell template to organize your documents.

After importing, you can add, move, rename, or delete folders as needed. You can import a folder structure directly under the Project Document, Shell Document, or Company Documents node to create the main folder structure, or create specialized structures to import under existing folders to create sub-folders.

You cannot use special characters / \ : * ? " < > | when naming a folder or publish path.

① Note

By default, files attached to business processes are placed in the Unpublished Documents folder in the Document Manager. A Publish Path data element can be designed in business processes in uDesigner to specify the automatic publishing of documents to a specified path and override the default. For document-type business processes With Folder Structure, you can specify that a configured folder path be appended to the folder structure. This appended path is based on the path configured in the uuu_dm_publish_path data element on the business process form, and the selection of the Append Line Items Folder Structure to AutoPublish Path option, which is documented in the *Unifier uDesigner User Guide*.

To create a folder structure template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Folder Structures**.
3. Select **New**, or from the **File** menu, select **New**, and then select **Create New Template**. The Create Folder Template window opens.
4. Enter a name for the template.
5. Select **Add**. A sub-folder will be created in the Template Folder. The Template Folder corresponds to the folder into which you will import the folder structure in the Document Manager.
6. Continue to add folders.
Select the parent folder before selecting **Add**. Selecting Add without selecting a folder will default to the last folder created.
7. To modify the folders, do any of the following:
 - Select **+** (plus sign) to the left of the folder to expand it and display the sub-folders.
 - Select a folder, and select **Remove** to delete a folder.

- Select a folder, and select **Rename** to change the name.
- Select a folder, and select **Move Up** or **Move Down** to move it.

8. Select **OK**.

To create a folder structure from an existing project/shell:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Folder Structures**.
3. From the **File** menu, select **New**, and then select **Copy from Project**. The Projects/Shells window opens.
4. Select a project/shell from the list, and click **Select**. You can select **Find** to search for the project/shell. The Copy Folder Template window opens, displaying the entire folder structure of the project/shell you chose.
5. Give the new template a name. You can add, modify, delete, or move the listed folders as needed.
6. Select **OK** to save the template.
The structure can be imported into the Document Manager. See Import a folder structure template.

To modify a folder structure template:

1. In the Folder Structure Template log, select the folder structure template to modify, and select **Open**. The View Folder Structure Template opens.
2. Select **+** (plus sign) to the left of a folder to expand it and display the sub-folders.
3. To modify folders, select a folder, and do any of the following:
 - Select **Remove** to delete a folder.
 - Select **Rename** to change the name.
 - Select **Move Up** or **Move Down** to move it.
4. Select **OK**.

To delete a folder structure template:

In the Folder Structure Template log, select the folder structure to delete, and select **Delete**. Select **Yes** to confirm.

Lock and Unlock the First-level Folder Structure

An administrator with full Document Manager permissions (full access or create permission on the Project Documents, Shell Documents, or Company Documents node) has the ability to lock or unlock the first-level folder structure. The first-level folder structure refers to the folders directly beneath the Project Documents, Shell Documents, or Company Documents node.

This allows an administrator to establish a standard first-level folder structure that cannot be modified. Users will not be able to add, modify, or delete the first-level folders, but can add sub-folders or documents. Permissions to lock first-level folders can be modified.

You can lock the folder structure at the Project Documents, Shell Documents, or Company Documents root folders.

To lock the first-level folder structure:

1. In **User** mode, do one of the following:

- Open a project/shell. In the left Navigator, select **Document Manager**, and then select **Documents**. Be sure the Project or Shell Documents folder is selected at the highest level (select the home icon at the top of the log).
 - Go to the **Company Workspace** tab. In the left Navigator, select **Document Manager**, and then select **Company Documents**. Be sure the Company Projects or Company Shells folder is selected at the highest level (select the home icon at the top of the log).
2. In the right pane, select the **Options** tab.
 3. Select the **Lock first level folder structure below Project Documents** (or Company or Shell) checkbox at the bottom of the window. You may need to scroll down. Users with permissions will be able to add documents and sub-folders, but cannot add, modify, or delete the first-level folders.

Note

This checkbox is only available in the Project/Shell and Company Documents folder properties.

4. Select **Save**.

To unlock the first-level folder structure:

Open the Folder Properties window, Options tab, and deselect the checkbox.

Configuring Document Manager

When configuring **Document Manager**, the user can create log views for the Document log.

All the DM attributes forms available in **Folder Properties** node (in **Document Manager**) are included in the configuration once the DM design is deployed. For more information on DM attributes, see:

- Working with Multiple Document Manager Attribute Forms
- Creating Multiple Attributes Forms

Unifier creates the configuration, by default, when the attributes form is deployed in the **Document Manager**, in uDesigner, and marked as **Active**.

The configuration for system-defined attribute form will always be **Active**. The user will be able to create log views whether configuration is **Active** or **Inactive**.

Only the active DM configuration forms will be available for selection in shells or shell templates.

If the user deletes the attribute form related to the DM configuration, the system deletes the configuration for the attribute form after the user deploys the DM design.

When the user opens a configuration for the **Document Manager**, a sub-node appears under the **Document Manager** node ("document manager log name } - Log Views"). This sub-node will be available in **Document Manager** log regardless of status (active or inactive), and the user can define log views for the respective DM logs. For example, if the user selects EMAAR Attributes, a sub-node appears as "EMAAR Attributes - Log views."

Permission and Access Control

Only a user with Configuration permission, for **Document Manager**, will be able to access this node and create views. To set permission:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Configuration**, expand **Document Manager: Permission Settings**, and then expand **Configure**.

Creating Document Manager Log Views in Admin Mode

The following list of views in the log are included in the out-of-the-box (OOTB) views. These views can be modified only at the Admin level. Views defined in the Configuration node will also be treated as OOTB views.

To define log views for **Document Manager**:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Document Manager**.

The **Document Manager** log has the following operational options:

- **Create:** Enables the administrator to create a view.
- **Actions:** Possible actions is a status that can be marked as active or inactive.
 - **Status (Active - Inactive)**
 - **Delete**
- **Find on Page:** To filter the results seen on **Document Manager** log and find a specific view on the displayed page.

Note

The user will not be able to inactivate the DM configuration associated with a system-defined attribute form.

The **Document Manager** log has the following columns:

- **No.:** This is a system-generated number. When populated, it enables the user to know the sequence of the views.
- **Name:** Name of the view.
- **Status:** Can be Active or Inactive.
- **Last Modified Date:** The date that the View was last modified. For a new view this will be the creation date. For existing system-defined views, for the very first time, when no modifications are done, this field will be blank.
- **Last modified by:** The user who modified the view. For existing system-defined views, for the very first time, when no modifications are done, this field will be blank.

Important Information about Creating DM Log Views

The Administrator cannot inactivate all the views. At least one view must be active.

The 'check for duplicate view' names will be performed per user. A user will not be allowed to create two views with the same name per DM log.

If a user changes the sequence of the views that was initially provided as per DM configuration, or if an Administrator has made few changes to the sequence, the user's view sequence will not change.

The new active views will be appended to the end of the list, in user view, in **Document Manager**.

You cannot modify the view names "All" and "Current Phase" of the **View** option.

Defining New View

When you select **Create**, the **New View** window opens. From top to bottom, this window has the following elements:

- **Save View As**
- **Cancel**
- **Save**
- **Columns tab**
- **Filters tab**
- **Group By tab**
- **Sort By tab**

Gear menu: This element enables the user to conduct the following:

- **Move Up:** This option is not available for first view.
- **Move Down:** This option not available for last view.
- **Delete:** This option not available for Active view.

Changing the sequence will change the number seen for the view. The sequence seen is the sequence seen in the log. When a drag and drop is done to re-sequence the views, the numbers will change.

The **Actions** option enables the user to set:

- **Status:** The user will be able to define the view status as Active or Inactive. The user can select one or more views and select Status to either Activate or inactivate the views.
- **Delete:** The user will be able to delete the views. Deletion of views will be possible only for Inactive views. If multiple views are selected and one of the views is active then post action only the Inactive views will be deleted.

Document Log Views and Configuration Package

Use the Log Views node to include the designs for the selected log views, for **Document Manager**, in your configuration package.

To include designs in the configuration package:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Component Lists**.
3. In a new or existing component list, go to the **Log Views** node and locate **Document Manager Log Views**.

DM log views in Component list/Configuration Package:

- The users can include DM log views and deployed designs.
- The users can include updated DM log views without any changes to the underlying columns used in View definition.
- When the configuration package is imported, it replaces any existing DM log views that were created by the administrator.

Note

The DM log view component will be included as part of impact analysis report, error report, and print report. In Impact Analysis Report, the name for log view will appear as "{DM configuration name} - Log View". In other reports the name will be maintained as is as seen in the DM configuration.

After a DM log view is included, the system will package all the log Views for that particular DMS in the configuration package. When imported, the package replaces all the log views created by the Administrator.

Note

The user-created view (the runtime created views) will not be impacted by Configuration package import.

The component name will be listed as **Document Manager**, for log views, and the location as **Log Views** in **Configuration**.

Setting Up the Planning Manager

Before you begin: Planning types are designed in uDesigner and deployed to Unifier. A planning type consists of planning item forms and planning sheet forms. Examples of planning types include Capital Planning, IT Planning, and so on. The planning item forms are used to create planning initiatives for that type, and the sheet forms are used to create the associated planning sheet. The types, forms, and corresponding logs are designed in uDesigner.

Step 1: Design Planning Type attribute in uDesigner and deploy to Unifier. This is similar to any other design deployment in uDesigner.

Step 2: Grant yourself permissions to create a default sheet structure and configure the planning type.

Step 3: Create a default structure for the planning sheets. This is a template that you will create to specify the default columns that should be on the planning sheets.

Step 4: Configure (activate) each planning type.

Step 5: Grant Planning Manager permissions to users. In User mode, the permissions for planning items and sheets are Full Access, Create and View.

After you have completed these steps, the Planning Manager is ready for use in Unifier (User mode).

Importing a Planning Type

To import and deploy a planning type into Unifier **Production** environment, see [Importing Configuration Packages](#).

Granting Yourself Permissions

When you import a new planning type, you must grant permission (to yourself, another administrator, or group such as Company Administrators) to configure the planning type and create a default structure for the planning sheets.

To grant configure permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, expand **Configuration**, expand **All**, and then select **Planning Manager**.
4. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
5. Select **Add Users/Groups**. The User/Group Picker opens.
6. Select the user(s) to whom you want to give configuration permission, and select **Add**. Select **OK**. The system adds the name(s) to the Permission/Access Control window.

7. Under Permission Settings, select **Configure**, and select **OK**. The system adds the name(s) to the Permission Settings window.
8. Select **OK**.

Creating a Default Structure for the Planning Sheet

Creating a sheet structure produces a template that users can use to create a planning sheet. You must create a default sheet structure before you can use the Planning Manager at the company level, or load the Planning Manager into a shell.

To create a planning sheet structure:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Planning Manager**.
3. Select the planning item for which you want to create a structure.
4. Select **Default Structure**.
5. In the **Planning Sheet Template** window, select **Columns**.
6. In the **Column** log, select **New** to add columns.
7. In the **Column Properties** window, enter the following information for each column:

In this field:	Do this:
Data Source	Select the field you want to appear on the sheet. (This list shows the fields [data elements] that were included on the Planning Item Attribute Form.) When you select the field, the system displays the field label in the Name field.
Entry Method	Specify: • Manual Entry if the user must manually enter values into this field • Formula if the field will be automatically calculated with a formula. (To create the formula, see Add a Column Based on a Formula Calculation.) • Query to retrieve data from the database that meets specific conditions and display it in this column. (To create the query, see Add a Column based on a Database Query.)
Show as percentage	If you chose Formula or Query as the data entry method, use these options to specify how the value should be shown. Note If the data element was defined in uDesigner with a specific decimal amount, it will override any decimal amount you specify here.
Decimal Places	
Display Mode	Use this option to hide or display this field on the sheet.

In this field:	Do this:
Total	If you created a formula or query to calculate the values for this column, you can specify: • Blank to leave the total of this column blank. (Choose "blank" for percentage columns and other columns where it does not make sense to display a total.) • Sum of All Rows to display the sum total of all the column values. • Use Formula Definition to display the total; that is, the same formula will be applied to the total that was applied to all the values in this column.
Average	If you created a formula or query to calculate the values for this column, you can specify: • Blank to leave the average of this column blank. (Choose "blank" for percentage columns and other columns where it does not make sense to display an average.) • Avg of All Rows to display the value as an average of all the rows' values.
Column Position After	Use this field to specify where the column should appear on the sheet.

Add a Column Based on a Formula Calculation

If you choose **Formula** as the data entry method, you can create a numeric, a "date add," or a "date difference" type of formula to automatically calculate the values for the fields in the column.

The numeric formula option is only available if the data source you specify has been built on the **SYS Numeric Logical Datasource** data definition.

A "date add" formula takes the value from a date field and adds the value of another field to it. This option is only available if the data source you specify has been built on the **SYS Date Logical Datasource** data definition.

A "date difference" formula takes the value from a date or date field and subtracts it from the value in another date or date field. This option is only available if the data source you specify has been built on the **SYS Numeric Logical Datasource** data definition.

To create a numeric formula for a column:

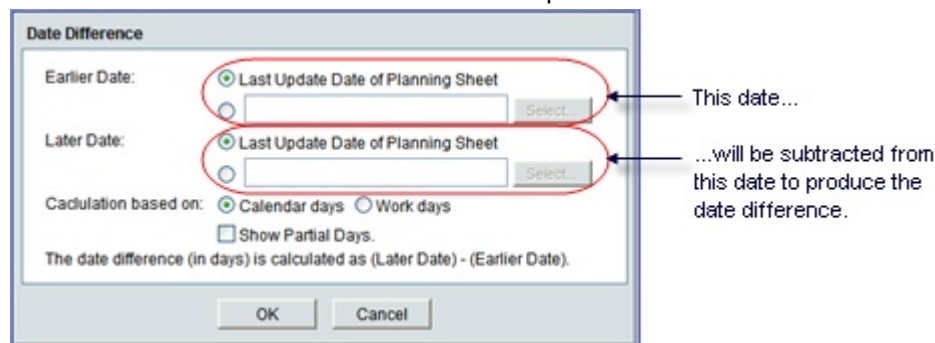
1. In the **Data Source** field, choose the field that contains the value you want to include in this column.
2. In the **Entry Method** field, choose **Formula**, and select **Create**. The Formula Creation window opens.
3. In the **Data Type** field, specify where the field comes from—a planning item, or the planning sheet. The Formula Creation window opens, showing a list of the fields from the data type you selected.
4. Create the formula using the field values in this data source, or field values and numeric operators, such as add, subtract, or multiply.
5. Select **OK**.

To create a "date add" formula for a column:

1. In the **Data Source** field, choose the field on the sheet that should show the value you are calculating here.
2. In the **Entry Method** field, select **Formula**, and then select **Create**. The Create Formula window opens.
3. In the **Date** field, select the field to which you want to add another value as follows.
 - a. Click **Select**. The Date Element Picker window opens.
 - b. In the **Data Type** field, specify where the date field you want to add to comes from—a planning item, or the planning sheet. The system displays a list of the fields on the planning item form, or the planning sheet.
 - c. Select the field, and select **OK**.
4. In the **Add** field, select the field that contains the value you want to add to the field.
5. Specify whether the calculation should be based on calendar days or work days.
6. Select **OK**. The system displays the formula on the Column Properties window.

To create a "date difference" formula for a column:

1. In the **Data Source** field, choose the field on the sheet that should show the value you are calculating here.
2. In the **Entry Method** field, select **Formula**, and select **Date Difference** from the list.
3. Select **Create**. The Date Difference window opens.



4. For the **Earlier** and **Later Dates**, you can use either the last date the Planning Sheet was updated, or you can choose another field from the sheet or a planning item to supply the date value.
5. In the **Calculation based on** field, specify whether the calculation should be based on calendar days or workdays.
6. If you want the value to include fractions of days, select the **Show Partial Days** checkbox.
7. Select **OK**.

Add a Column based on a Database Query

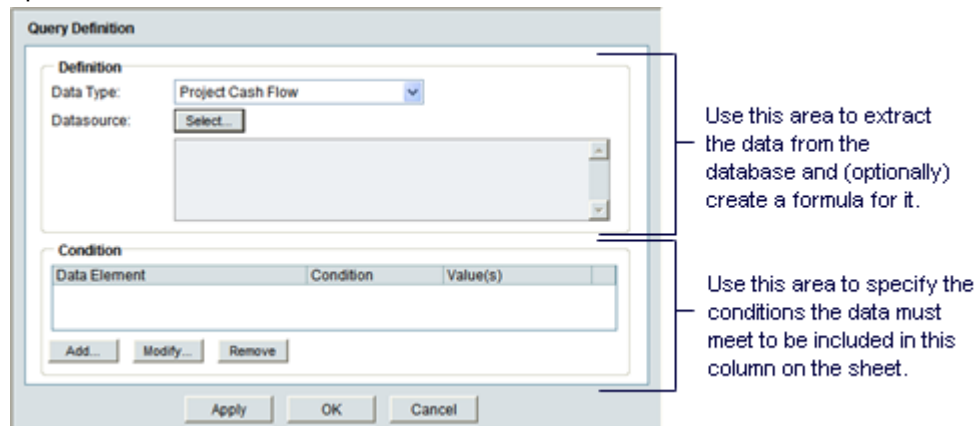
If you choose **Query** as the data entry method, use these instructions to add a column to the Planning Sheet that will contain values extracted from the database. These values will be retrieved from the database only if they meet the conditions you specify. (In operation, you will be extracting data from the database and testing it to determine whether it should be included in this column.)

The Query option is only available if the data source you specify has been built on one of the following data definitions:

- **SYS Numeric Datasource**
- **SYS Date Datasource**

To create a query:

1. In the **Data Source** field, choose the field on the sheet that should show the value you retrieve from this query.
2. In the **Entry Method** field, choose **Query**, and select **Define**. The Query Definition window opens.



3. In the **Data Type** field, select the functional area the data should come from. This field is the first step in describing where the data resides in the database. For example, the data type could be a Cost BP, a fund allocation request, or a cash flow.
4. In the **Datasource** field, click **Select**. The Formula Creation window opens, showing a list of the fields such as query-based tabs, from the data type you selected. You can drill down into the data type for other data sources by selecting the arrow beside this field and selecting other data source areas.
5. (Optional) Create a formula using the field values in this data source, or field values and numeric operators, such as add, subtract, or multiply. Select **OK** to return to the Query Definition window.
6. Specify the query condition as follows:
 - a. Select **Add**. The Query Condition window opens.
 - b. In the **Data Element** field, click **Select** to open the Data Element Picker.
 - c. In the **Data Source** field, select the functional area the data should come from. The application displays a list of the fields from the data source you selected.
 - d. From the list, select the field that contains the value you want to place conditions on, and select **OK**.
 - If the value meets the condition you specify, it will be included in this column on the sheet.
 - If the field you select is a date field, the system will display an additional field, **Timescale Units**, in which you will need to specify the option that matches the column definition. For example, if the column is a yearly budget, you would select **Years**. If the column is to show a quarterly value, you would select **Quarters**.
 - e. In the **Condition** field, select the condition the value must meet to be included on the Planning Sheet, such as **equals**, or **does not contain**. For example, the value in the data element must equal 10, or the value in the data element must not equal (that is, "is not") **Yes**.

- f. In the **Values** field, enter the value you want to test the condition on (or select the value from the list that appears when you click **Select**). The Select button may or may not appear, depending on the data element you choose. For example, for a data source of "Business Process/Status," you could choose a status from the list of statuses associated with that BP. This would limit the column data to business process records of that status.
 - g. Select **OK**.
7. On the Query Definition window, select **OK**.

Create a Planning Column Group

This allows you to group columns together and assign a group name, which is displayed on the planning sheet above the columns. Columns in a group must be contiguous.

Note

To add a column to an existing group, ungroup the existing columns, and then create a new group to include the new column.

To group planning sheet columns:

1. Go to the Configuration - Planning Manager log, and select **Default Structure**.
2. Select **Columns**. Columns must be contiguous, and cannot belong to more than one group.
3. From the toolbar, select **Group Columns**, and then select **Group**. The Edit Column Groups window opens.
4. Name the group, and select **OK**. Group names must be unique. The Group Name will appear in the planning sheet log and also on the Planning Sheet above the columns.

To ungroup columns:

Select grouped columns, select **Group Columns**, and then select **Ungroup**. Ungroup will remove group name from all columns that are part of that group.

To add or remove columns to the group:

1. Ungroup the columns.
2. Select a new group of contiguous columns. Add or move columns as necessary.
3. Group the new columns.

To change the group name:

1. Select any column in the group.
2. From the toolbar, select **Group Columns**, and then select **Group**.
3. Enter a new Name, and select **OK**.

Edit Planning Sheet Properties

You can edit the properties in individual planning sheets or the default structure.

To edit planning sheet properties:

1. Open the planning sheet or default structure.
2. From the **File** menu, select **Properties**. The Properties window opens.
3. Complete the **General** tab: You can enter or change the **Name** of the sheet, and add an optional **Description**.
4. Select the **Options** tab:
 - **Sort by Column:** Choose the column to sort the planning item rows by. The default is Name (planning item name). As you add additional columns to the sheet, these columns will be available for selection.
 - **Sort Order:** Choose Ascending or Descending; works in conjunction with Sort By Column.
 - **Update Planning Items:** When this checkbox is selected, it allows planning sheet users to manually edit planned item data. This helps to prevent conflicting data from multiple planning items.

This box can be checked on only one sheet per Planning Type. When this box is checked, the sheet is moved to the top of the log, and displayed in bold font, thereby acting as a master planning sheet.

5. Select **OK**.

Configuring the Planning Type

Configuring a planning type makes it active, gives it a numbering sequence for the records, and specifies an optional Help file and hard copy layout for printing.

To configure a planning type:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Planning Manager**. Each planning type will be listed here.
3. Select a planning item, and select **Open**. The Planning Configuration window opens.
4. Complete the **General** tab:
 - **Sequence Format:** This will define how planning item records will be numbered under this Planning type.
 - **Help File:** This will allow user to upload a PDF file as help file for Planning Item. This file should be available from Planning Item log and individual planning item record.
 - **Status:** This defines if this planning type is active or not. If it is not active, it will not be visible under User mode even if a user has permission to access it.
5. Select **OK**.

Deleting a Planning Manager

This section describes how to manually delete a Planning Manager from a shell.

Note

You can delete a Planning Manager from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the shell tab, and switch to **Admin** mode.
2. In the left Navigator, select **Setup**, and then select **Planning Manager**.
3. Select a Planning Manager for deletion.
4. From the **Edit** menu, select **Delete**.
5. When the confirmation message appears, select **Yes** to delete the record from the Planning Manager.

Configuring Planning Manager Configuration Package

The following configurations can be included in the Planning Manager Configuration Package:

- General setup
All the fields included in the General Configuration (General tab)
- Custom Print
Word and PDF templates, if any.
- BIP Custom Print
All the Oracle Analytics Server Custom Print in the Custom Prints and Reports.
- Default structure
The default structure of the Planning sheet.

For more information, see [Configuration Package Management](#).

Granting Planning Setup Permissions

After you have created a default sheet structure and activated the planning type, grant yourself and other users setup permission to the Planning Manager.

To grant setup permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
 - For a Planning Manager at the company level, expand **User Mode Access**, expand **Company Workspace**, and then select **Planning Manager**.
 - For a Planning Manager at the project/shell level, expand **User Mode Access**, expand **Projects/Shells**, expand **Setup**, and then select **Planning Manager**.
3. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
4. Select **Add Users/Groups**. The User/Group Picker opens.
5. Select the user(s) to whom you want to give configuration permission, and select **Add**. Then select **OK**.
The system adds the name(s) to the Permission/Access Control window.

6. Under Permission Settings, select **Setup**, and select **OK**. The system adds the name(s) to the Permission Settings window.
7. Select **OK**.

Loading the Planning Manager

Loading the Planning Manager is part of setting it up. In this step, you will be loading the manager into the area where it should reside—the Company Workspace or a project/shell.

When you load the Planning Manager, you also load the permission infrastructure and the ability to grant permissions for the manager.

To load the Planning Manager:

1. Do one of the following:
 - To load the Planning Manager into the Company Workspace, go to the **Company Workspace** tab, and switch to **Admin** mode. In the left Navigator, select **Company Workspace**, and then select **Planning Manager**.
 - To load the Planning Manager into a project/shell, go to the shell or sub-shell and switch to **Admin** mode. In the left Navigator, select **Setup**, and then select **Planning Manager**.
2. Select **New**.
The New Business Processes window opens, showing the Planning Managers that are available for loading.
3. Select the planning manager you want to load, and select **OK**.
The system displays the manager in the right pane.

Granting User Permissions

After you have loaded the Planning Manager into the company workspace, or the shell, grant user permissions to the Planning Manager.

To grant user permissions:

1. Open the shell or sub-shell in which the Planning Manager resides.
2. In the right pane, under **Administration Mode Access**, select **Access Control**.
3. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
4. Select **Add Users/Groups**. The User/Group Picker opens.
5. Select the user(s) to whom you want to give permissions, and select **Add**. Then select **OK**. The system adds the name(s) to the Permission/Access Control window.
6. Under Permission Settings, select the permissions you want to grant the user(s), and select **OK**. The system adds the name(s) to the Permission Settings window.
7. Select **OK**.
8. In the right pane, under **User Mode Access**, select **Planning Manager**.
9. For both the planning items and planning sheets, repeat steps step 3 through 6.

Master Log - Planning Items for the Planning Manager

The master log (**Master Log - Business Processes** node) is located in the **Home**  tab. The master log enables users to access all or a subset of records of the same type, in a single log that spans multiple projects/shells. The master log for Planning Items lists all Planning item types at the project/shell level in separate nodes for each type.

Note

The name of the master log (**Master Log - Business Processes** node) can be customized.

The master log is available for all Planning Manager logs; however, they are not visible to users unless they have permission to view the log.

Note

The company-level planning items are not listed under the master log.

For users to view and work with the master log (**Master Log - Business Processes** node), you must grant permissions to it. You can grant permissions for users to access all planning items in the master log, or to individual planning items.

To view planning items, users must also:

- Be an active member of the project, shell, or sub-shell
- Have access to at least one business process in the master log

To set permissions for planning items master log (**Master Log - Planning Items** node):

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Home**, expand **Master Log - Planning Items**, and then select the applicable **[planning item]**.
4. Add the user(s) and set the permissions as needed:
 - **View:** Users can view all records across all projects and all records in the shell hierarchy (subject to their highest level of shell membership in the hierarchy) independent of whether they are assignees on or have permissions to view and manage individual records within a particular project/shell. These users can also view saved searches.
 - **Allow Bulk Edit:** Users can select one or more records within a master log and perform bulk edits on records. Selected records can potentially span across multiple shells. Users having this permission automatically have View permissions.

Setting Up the Portfolio Manager

The Portfolio Manager is where the budget forecast planners in your company can gather cost and schedule information on projects (both planned and in execution) and perform analyses on "what if" scenarios. These scenarios are used to propose an optimal mix of projects for a portfolio, based on available budget targets and the strategic goals of the company.

Portfolio planners can create a portfolio for a specific "planning horizon" (for example, from 2014 through 2020) and then create multiple scenarios in that portfolio. Each scenario can use forecast numbers and actuals, as well as schedule dates, for both planned and active projects in a specific shell type across a hierarchy in the company.

Budget forecast planners create these scenarios on sheets, one for each scenario. The scenario sheets can pull in the following data from any shell type in a hierarchy:

- Project information from the Shell Attribute Form or single-record business process
- Project start and end dates from the Shell Attribute Form or single-record business process
- Cash flow data (both forecasted and actual) from each project's Cost Manager

With this data, you can forecast costs over a specific time period (called a "period structure"). You can then manipulate scenarios by:

- Including or excluding projects
- Pushing start dates for planned projects into the future
- Modify project end dates to change the project's duration
- Proposing different cash flow distribution numbers by manually editing the cash flow columns
- Negotiating proposed budgets with project managers

Note

The numbers the planner proposes in a scenario will NOT affect a project's live data. The proposed numbers are stored only in the Portfolio Manager and will not affect live project data until a scenario has been approved by your company management.

After these scenario analyses have been completed, the best (or several best) scenario(s) can be sent to the executive decision makers for approval.

After a scenario has been approved, the system:

- Marks the approved scenario "shared" so that project managers can see the approved dates and numbers. The scenario is set to read-only mode and can no longer be modified or deleted.
- Updates each project's original budget numbers with the proposed numbers on the approved scenario.

- Updates each project's monthly or yearly cash flow numbers with the proposed numbers on the approved scenario.
- Updates the project start date (if it was changed) for any planned projects that will begin during the portfolio's planning period.
- Locks the budget and cash flow numbers to prevent any further changes.

To set up the Portfolio Manager:

Before you begin: A Portfolio Attribute (Detail) Form is designed in uDesigner and deployed to Unifier. This attribute form is what you and other users will use to create portfolios.

Step 1: Design the Portfolio Manager Attribute Form in uDesigner and deploy to Unifier. This is similar to any other design deployment in uDesigner.

Step 2: Grant yourself permissions to configure the portfolio and create period structures. See [Create Period Structures](#).

Step 3: Create period structures under the Standards & Libraries node. Unifier uses these period structures to calculate costs for the portfolio's forecasted budget. See [Create Period Structures](#).

Step 4: Configure the portfolio.

Step 5: Grant Portfolio Manager permissions to users.

After you have completed these steps, the Portfolio Manager is ready for use in Unifier User mode.

Import a Portfolio

To import and deploy a portfolio manager into Unifier **Production** environment, see [Importing Configuration Packages](#).

Grant Yourself Permissions

When you import a new portfolio, you must grant permission (to yourself, another administrator, or group such as Company Administrators) to configure the portfolio and set up period structures in the Standards & Libraries.

To grant configure permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Configuration**, expand **All**, and then select **Portfolio Manager**.
4. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
5. Select **Add Users/Groups**. The User/Group Picker opens.
6. Select the user(s) to whom you want to give configuration permission, and select **Add**. Then select **OK**.
The system adds the name(s) to the Permission/Access Control window.
7. Under **Permission Settings**, select **Configure**, and select **OK**.
The system adds the name(s) to the Permission Settings window.

8. Select **OK**.

To grant permissions to create period structures:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, expand **Standards & Libraries**, and then select **Period Structure**. See [Create Period Structures](#).
4. In the **Module Permission Settings** window, select **Add**. The Permission/Access Control window opens.
5. Select **Add Users/Groups**. The User/Group Picker opens.
6. Select the user(s) to whom you want to give configuration permission, and select **Add**. Then select **OK**. The system adds the name(s) to the Permission/Access Control window.
7. Under **Permission Settings**, select **Create**, and select **OK**. The system adds the name(s) to the Permission Settings window.
8. On the Permission Settings window, select **OK**.

Create Period Structures

Each portfolio needs a defined period of time to be able to calculate costs for the forecasted budget. Creating a period structure designates the time scale for the period, the format the period should appear in at runtime on the period picker, and whether the period is active (available for use at runtime).

After you have created a period structure, it cannot be deleted. In addition, after a period is in use in a deployed Portfolio Manager, it cannot be modified or inactivated.

To create a period structure:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Standards & Libraries**, and then select **Period Structure**.
3. Select **New**. The Period structure window opens.
4. Use the information in the table below to complete the fields in the Period Structure window.
5. Select **OK**.

In this field:	Do this:
Period Structure	Enter a name for the period structure.
Description	Enter a description of this period. This is not required, but is recommended.
Status	Specify whether this period is active (available for use) or inactive.
Period Type	"Standard Planning Period" & "Financial Periods" For Financial Periods below Period Settings, options will be disabled and new Table with Financial Period will appear.

In this field:	Do this:
Period Settings	Specify the time scale for this period. Period: Select the time period for the analysis. This list shows years, each beginning with a month in the year and ending at the end of the month preceding the beginning month. Identify Period By: Use this option to accommodate time periods that span across two years. For example, if your fiscal planning period is from July 2010 to June 2011, use this option to tell the system that the planning year is based on either a starting month of July or an ending month of June. Format: Specify the format the date should appear in: For Year, YYYY or YY

The Period Structures support financial periods, while keeping the current period structures intact. The following period types enable the user to create financial periods, in separate tab:

- Standard Planning Period
- Financial Periods

The user can toggle between the period type until saving the Period structure. After the user creates the financial period, and uses it (Shell options or PPM configuration), the user will not be able to delete or modify the financial period.

The following explains the options:

Option	Description
Add	Lets you create a default row, in the grid below starting from today date with end date, as weekly. You can modify the data.
Remove	To remove a row in the grid.
Generate	Opens a window and lets you select start and end dates and generate group of data.

There is no gap between the end date and start date for two consecutive periods, while creating sub periods.

The following explains the columns present in the auto generated periods:

Column	Description
No.	The sequence number for the sub period being generated.
Period Name	Every sub period will have a name automatically assigned to it based on the start date. For example, if the sub period start date is 01/08/17, then 01/08/17 will be the period name.
Start Date	Sub period start date.
End Date	Sub period end date.
Year	Financial year for sub period being generated.

The date format will depend on the selection made in the User Preferences.

The following is an example of Financial Period, where:

No.: The number of Sub Period

Sub Period Name: Monthly

Identify Date by: Period Start

Date: "01/09/17" (It can be any date and not just the start date for the week, month, quarter, and so on.)

No.	Sub Period Name	Start Date	End Date	Year
1	1-Sep-17	1-Sep-17	30-Sep-17	2017
2	1-Oct-17	1-Oct-17	31-Oct-17	2017

The Year will be the year for the start date of first financial period until it reaches the same date next year (completes 365 days). Then it will move to next financial year.

Use the Export option to export data in all the columns.

Configuring the Portfolio Manager

Configuring a portfolio means configuring the scenarios that will be analyzed in a portfolio. By configuring a scenario, you create a "template" for the sheets that planners can use to create the scenarios for analyzing and forecasting capital budgets.

The template will contain:

- The planning options for the scenario sheet, such as the period structure and data linking options
- Project phases that identify a project as planned or in execution
- The data sources to be used for the analysis, such as project dates and cash flow sources.
- The query that will extract the project data that should be included in the portfolio
- The column layout that will appear on the scenario sheet

To configure:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Portfolio Manager**. Each portfolio will be listed here.
3. Select a portfolio, and select **Open**. The Portfolio Configuration window opens.
4. Enter values in the fields of the following tabs as explained below.

General tab

1. Use the following table to enter values in the fields:

In this field:	To this:
Status	Specify whether this portfolio is active (available for use) or inactive. When you activate a portfolio, the system loads it into all shells, but it will not be available to users until you grant user permissions to it. (See Grant User Permissions.)

In this field:	To this:
Include Projects of Type	Specify the shell type that contains the project data that should be analyzed. The list will show all multiple-instance CBS shell types from any hierarchy, and data from all shells of this type will be used in the analysis.
Additional attributes from	The portfolio will automatically include data from the Portfolio Attribute (detail) Form; however, you can also include information from single-record business processes, if they are appropriate. If there is a single-record business process that contains information that you want to include in this portfolio, select the name of the record you want to include.
Yearly Planning	Fields that specify the following requirements.
Period Structure	Specify the time period this portfolio should use. These period structures were created under the Standards & Libraries node after the portfolio was imported. The option shows what the period is (yearly, quarterly, or monthly) and the format in which the period will appear on the Period Structure Picker at runtime.
Planning Phases	If you are including planned projects, you must specify what phases of these projects you want to include in the analysis for this portfolio. Select the planning phases whose data should be used in the portfolio analysis. You can select multiple phases.
Projects added to a scenario are initially	As the administrator, you can specify that projects in a portfolio are linked or unlinked to project data when the user first opens the scenario sheet. After the scenario sheet is open, the user can choose to link or unlink the projects as appropriate. Linked: This option links the project data to the project database and updates the data in the portfolio every time the user opens a scenario sheet. Unlinked: This option unlinks the project data from the database. Select this option if you do not want the project data dynamically updated.
Project Data Sources	Specify where the data should come from for the portfolio. In this option, you will be choosing the data elements that will provide the values for the scenario analyses.
Start Date	Select the name of the field (data element) that contains the project start date. The elements you see on this list come from the project attribute form and any single-record business process you included. Update project start date upon approval Select this checkbox if you want to update a planned project's start date on the attribute form when a scenario is approved for the current budget. The approved scenario may contain an adjusted start date. If the start date is adjusted on the scenario, the system will change the date on the project's/shell's attribute form to reflect the new date. If the Schedule sheet properties are configured to drive the schedule start date from the project/shell attribute form, the form will then update the start date on the Schedule sheet.

In this field:	To this:
End Date	Select the name of the field (data element) that contains the project end date. The elements you see on this list come from the project attribute form and any single-record business process you included.
Budget Source	Select the budget source that should be used in the analysis. This budget source was defined under Cash Flow in Standards & Libraries .
Forecast Source	Select the forecast source that should be used in the analysis. This forecast source was defined under Cash Flow in Standards & Libraries. If the value of the Forecast Source is Forecast, the Display monthly breakdown of Actuals option is available for you to select. You have the ability to show monthly breakdown of Actuals by selecting the checkbox. • If the checkbox remains deselected, for the current year the existing functionality for the Portfolio Manager will be maintained. • If the checkbox is selected, the user will be able to see the monthly breakdown for Actuals, and the values displayed would be read-only for months prior to the current month for the current year. By default, the checkbox will be deselected. Select the data source according to your business case. The curves of the selected data sources must have the same currency. Portfolio Manager Configuration for Derived Curve When the user selects the forecast source as a Derived Curve, in Portfolio Manager: After the configuration takes place, in User mode, the Portfolio Manager scenario sheet synchronizes with Cashflow and displays the data through a Derived Curve. The user has the ability to show monthly breakdown of actuals by selecting the checkbox to display the monthly actuals. By default, the checkbox is deselected. If the checkbox is deselected in the Portfolio Manager configuration, for the current year the existing functionality is maintained, for Portfolio Manager. Portfolio Manager Configuration for Label on Monthly Actuals Use the Display financial period breakdown of Actuals checkbox for breakdown based on financial period.
Additional Information	Specify the list of users, and groups, who receive notification emails when a particular scenario is shared, or approved.
Notify users or groups when a scenario is shared or approved	Click Select to see a list of company-level users, or groups, and select one. The system only sends the email notification to existing users, or groups, at the project level. If selected recipients do not exist at the project level, the system will not send any notifications.

2. Select **Apply**, and then select the **Query** tab.

If the financial period type of period structure is selected in the configuration **General** tab, the system hides the following drop-down list items (under Planning horizon in columns tab) because:

- The number of years will be determined by the number of unique years in the sub periods for the financial periods.
- The number of years planned in months will be same as the number of years planning with month as a sub period (the "Apply actuals to each sub period/month" checkbox).

Query tab

On the **Query** tab, you create a query that will search the database and extract the shell records to display on the scenario sheets in the portfolio. The query will filter the records returned from the database according to a condition or conditions you specify. The condition(s) will "test" a field or fields on the form to see if they pass or fail the criteria. If the fields pass the criteria, the system will make it available for the scenario sheets.

The query that extracts the projects from the database is a dynamic process that occurs whenever users open a scenario sheet. The projects that appear on the sheet will fluctuate, depending on whether they still meet the criteria for inclusion. For example, a project that was previously on the sheet may be dropped from the sheet if it no longer meets the query criteria. Another project may be added to the sheet because it now meets the query criteria.

The query will search the database and extract the shell records to display on the scenario sheet. The query will filter the records returned from the database according to a condition or conditions you specify. The condition(s) will "test" a field on the form to see if it passes or fails the criteria. If the field passes the criteria, the system will include it on the scenario sheet.

1. Under Projects, select the **Auto-add/auto-remove projects to and from the portfolio based on the query** field if you want the system to automatically add and remove projects to and from scenario sheets.
2. Create the query:

The query will search the database and extract the shell records to display on the scenario sheet. The query will filter the records returned from the database according to a condition or conditions you specify. The condition(s) will "test" a field on the form to see if it passes or fails the criteria. If the field passes the criteria, the system will include it on the scenario sheet.

 - a. Select **Add**. The system displays the **Add Query Condition** window.

In the **Data Element** field, select the field on the attribute form, or single-record business process, that you want to test with the condition. For example, the condition might be that the status field on the Shell Attribute Form must be "Active."

The window expands to show an active **Condition** field and additional fields where you can specify the query criteria.
 - b. In the **Condition** field, select the condition the value in the field must meet.
 - c. Select **OK**.

The remaining fields on this window vary, depending on the data element and the condition you specified. For help in completing these fields, use the information in the Queries section.

Note

If any field in the query or queries is subsequently removed from the shell or single-record BP design, the entire query operation will be ignored. That is, if one query fails because a field was removed from the design, the system will ignore all the queries. If a field has been removed from a design, you must amend the query.

3. Repeat steps a through d to include additional query conditions.
4. Select **Apply**, and then select the **Columns** tab.

Columns tab

Use the following table to enter values in the fields:

In this field:	To this:
Scenario Columns	Specify what additional columns you want to appear on the scenario sheet. You can add the Project Phase Data Element (DE) to the Portfolio to see the latest value of Project Phase (Planning, Conceptual Design, Schematic Design, and so on) in the Portfolio as it changes (manually or via Gates) without having to take a manual step of saving a single record BP within a Shell. To add the Project Phase DE, go to the Configuration window, select Add, and from the Data Element drop-down list select Project Phase .
Initial Sort Column	Use this to specify the column by which the scenario sheet is initially sorted when the user opens the sheet. The user can change the column sorting.
Sort Order	Specify whether the projects on the sheet should appear in ascending or descending alphanumeric order.
Freeze column up to	This option affects the scrolling behavior of the scenario sheet. Scenario sheets contain certain columns that must always appear on the sheet. As administrator, you can add more columns to the sheet. Of these columns you add, you must specify that 1 of those columns must remain fixed when the user scrolls the sheet horizontally.
Number of years planning	Select the number of years to be included in this scenario. The default horizon is 10 years. This option designates the year columns that will appear on the scenario sheet.
Number of years planned in months	Specify how many years the planner wants to plan by months. For example, the planner may want to plan by month for the first two years; thereafter, by year.

Users can define the column width for the Project Portfolio Manager (PPM) columns.

Defining the column width can be done in the **Column Properties** window, when adding a new column in the **Columns** tab. The default value is set to 120 characters, and the user can change the value to a custom value. For the existing columns in Portfolio Manager (in the Configuration), the system sets the width to the default column width. The changes made in Configuration (Column width, Freeze column up to, and so on) remain in the new PPM.

You can edit the width for the following columns in the PPM configuration:

- Project Name
- Start Date
- End Date

Configuring Portfolio Manager Configuration Package

The following configurations can be included in the Portfolio Manager Configuration Package:

- General setup
All the fields included in the General Configuration (General tab), including: Yearly Planning and Project Data Sources.

Note

Cash Flows that have been selected in the Budget Source and Forecast Source fields are included in the Configuration Package. If Budget Source and Forecast Source values are changed in the portfolio configuration, cashflow compilation will ignore any projects that are exceptions. If data sources do not exist in the destination environment, the system will create the data sources.

- Query
All queries that have been configured based on data sources.
- Columns structure
The structure of the Column that has been defined in the Columns tab.

You can include the portfolios that you want to include in your configuration package. To include a Portfolio:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, select **Component Lists**, select the applicable **[Component List]**, select **Designs**, and then select **Portfolio Manager**.
3. Select the required portfolio.
4. Name the component list.
5. Conduct an Error Check.
6. Select **Save**.
7. Go to the **Company Workspace** tab, and switch to **Admin** mode.
8. In the left Navigator, select **Configuration Package Management**, and then select **Configuration Packages**.
9. On the **Configuration Pages** log, select **Create**.
10. Select your portfolio manager from the **Component Lists**.
11. Enter values in the **Package Name** and **File Name** fields, and select **Next** to see the preview.
12. Select **Next**, and review the contents.
13. Select **Next**.
14. Select **Create**.

Note

For a successful inclusion of a portfolio, the shell and single-record business process must be a part of the Configuration Package.

For more information, see [Configuration Package Management](#).

If the user selects a Portfolio Manager, the financial period selected in the configuration is included in the Configuration Package.

Updated Cash Flow and Shell Templates are also available for the Configuration Package.

Delete Columns from a Sheet

You can delete columns from a sheet from either the Portfolio Configuration window, or the Column Properties window.

To delete columns from the Portfolio Configuration window:

1. Select the **Columns** tab.
2. In the Scenario Columns section of the configuration window, select the name of the column, and select **Remove**.

Grant User Permissions

When the Portfolio Manager is active in a shell, you must grant user permissions to the Portfolio Manager.

To grant user permissions:

1. Go to the shell tab where the Portfolio Manager resides and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, and then expand **Portfolio Manager**.
4. Select the portfolio.
5. In the **Permission Settings** window, select **Add**. The User/Group Permissions window opens.
6. Select **Add Users/Groups**. The User/Group Picker opens.
7. Select the user(s) to whom you want to give permissions, and select **Add**. The system adds the name(s) to the Permission/Access Control window.
8. Under **Permission Settings**, select the permissions you want to grant the user(s), and select **OK**. The system adds the name(s) to the Permission Settings window.
9. Select **OK**.

Templates (Shell Attribute Form)

In the Shell Attribute Form, Options tab, the user can select a financial period from the Financial Period picker.

The Financial Period picker has a list of all financial period type of period structures present in the Standards & Libraries (standards and libraries).

The following explains the financial period in:

- Shell
- Cash Flow

Shell

Depending on the financial period selected at the Shell level, when the user tries to create a scenario under Portfolio Manager, the user will only see the list of projects with the same financial period present in the respective Shell options.

If the user has selected a financial period at the Shell level, then the selected option overrides the financial period coming from Portfolio Manager by way of configuration.

The same selected financial period will also be used under Cash Flow curves, for the time scale of the financial period type.

The user is able to change the financial periods when there are no cashflows associated with that financial period.

Accordingly, when the Cash Flow is refreshed, it uses the new period structure.

If the user selects a period from the period picker in the Shell details window, the selected period will be used across Cash Flow curves (if time scale type is financial period) and Portfolio Manager.

Cash Flow

The Portfolio Budget curves (Shared, Approved, and Original), in Cash Flow, are linked to Portfolio Manager scenarios.

User can attain data from the Portfolio Budget curves (Shared, Approved, and Original), from the Portfolio Manager scenario in Parent Shell, into the Cash Flow curves within a Project/Shell.

During a portfolio analysis, the Portfolio Manager can produce the following Portfolio Budget curves:

- **Shared Budget curve**
The Shared Budget curve displays the portfolio planner's proposed number for the project.

The User can include the Shared Budget curve on the Cost worksheet (along with the forecast budget or any other budget curve) to see the difference between the project numbers and the planner's proposed budget numbers.
- **Approved Budget curve**
When a scenario is approved in the Portfolio Manager, the budgets for each project in the scenario are marked "approved."

Unifier lock and stores the budgets in Portfolio Manager.

An Approved Budget curve displays the approved budget for the project for the planning period (usually a year).
- **Original Budget curve**

The Original Budget is the last approved budget for the project before it moves into its execution phase.

The approved Original Budget becomes the project original budget. This original budget (and any changes that occur to the numbers during the life of the project) becomes the project approved budget.

The Portfolio Manager scenario (with Financial Period as the Period Structure) created in the parent Shell will push/pull the data from respective curve only. That is to say:

- For the child Shell, it has the same Financial Period in its options, and
- It will consolidate the data for only those Cash Flows where the timescale has been selected as Financial Period.

If the user selects a financial period from the 'by' drop-down list, then the corresponding drop-down list for financial period will get populated with the Financial Period present in the Shell options.

Other options, in timescale, will be disabled (for format and so forth), and it will remain blank with other options enabled (for format and so forth).

For Baseline and Forecast type curves, the summary sheet spreads and schedule manager spreads will be assigned to the relevant period.

For the Actuals, the cost sheet columns and effective dates will be used to assign the values to the relevant period.

For a Cash Flow curve, the X-axis for graph will still remain the same but the points in the curve will be based on the Financial Period that has been selected. The columns in the grid will be based on the Financial Period that has been selected, also.

Maintaining the Resource Manager

If you have access to the Resource Manager feature, which was deprecated starting with version 23.10, you can use it view current roles and resources in Unifier.

Configuring Resource Manager at Company Level

The Resource Manager can be configured at the company level.

To configure the Resource Manager at the company level:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Resource Manager**.
3. Select **Resource Manager**, and select **Open**.
4. Complete the Resource Manager General Configuration window as described in the following table, and then select **OK**.

In this field:	Do this:
Resource Code	Choose one of the following: • Manual: Allows you to enter a resource code manually while defining resources. Validation is performed to ensure resource codes are unique. • Automatic: Automatic numbering generates unique resource codes using a sequence. • Sequence Format: For automatic numbering, enter an alpha-numeric prefix for the resource code (for example, RES). • Start: Enter a number to start the sequence. Numbers are generated from the start number in increments of 1.

Configuring Resource Manager Configuration Package

The following configuration can be included in the Resource Manager Configuration Package:

- General setup
All the fields included in the General Configuration (General tab)

For more information, see [Configuration Package Management](#).

Viewing and Managing Resource Booking Details (Calendar Tab)

You can view booking dates, unavailable dates (non-project time, such as vacation days), and more. Hard-bookings and soft-bookings are displayed on the calendar.

To view the resource booking calendar and details

1. In the **Create Resource** window, select the **Calendar** tab.
2. Select the **Month** tab or **Week** tab to change the calendar view. If a resource has more than 5 bookings in a day, you can view them all in the week view.
3. To view all projects/shells for any given day, select a day, and select **Booking Details**. The **Resource Booking Details** window displays the bookings for that resource on the selected date. It shows the project/shell number, project/shell name, booking status, dates when the booking starts and ends, total hours booked for the resource during this period on the project/shell, and total hours booked on the current date on the project/shell. The dates and hours shown include non-project time.

Maintaining the Schedule Manager

The Schedule Manager feature was deprecated starting with version 23.5. However, if you have access to it, you can continue to use it to:

- Update activities and submit changes to Linked Schedule Sheets.
- Link existing schedule sheets in a project/shell template to project/shell schedule sheets.
- Configure data mapping to allow direct importing of external sources such as Microsoft Project or Primavera schedules.

Note

Many of the tasks you might perform as Administrator can also be done at the user level. The tasks you can perform only at the Administrator level are completely described in this section. For those activities that overlap levels, refer to the *Unifier Managers User Guide* for detailed instructions.

Importing an Activity Attribute Form

The Schedule Manager needs attribute forms to define the activities for a project schedule, including its start and end dates.

When creating new activities on an existing schedule sheet, the system opens this form as the General tab of the Activity Properties form.

The Resource Manager and the Schedule Manager can work together for resource management. If you have previously deployed the Resource Manager, the system uses the existing Resource Assignment Attribute Form as the Resource tab of the Activity Properties form.

Note

The Resource Manager feature was deprecated starting with version 23.10. However, if you have access to it, you can continue to use it with the Schedule Manager, which was deprecated starting with version 23.5.

To import and deploy an update to an existing Schedule Attribute Form or an existing Resource Assignment Attribute Form into a **Production** environment, see [Importing Configuration Packages](#).

Deleting Schedule Sheets

This section describes how to manually delete a schedule sheet from a shell.

Note

You can delete a schedule sheet from a specific shell template but not from other Projects/Shells that have been created using the template.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. Select a sheet for deletion.
5. Select **Delete**.
6. When the confirmation message appears, select **Yes** to delete the schedule sheet.

Granting Schedule Manager Permissions to Users

After the Schedule Manager is active in a shell, grant user permissions to the manager and the custom calendars.

To grant user permissions to the Schedule Manager:

1. Go to the shell tab where the Schedule Manager resides, and switch to **Admin** mode.
2. In the left Navigator, select **Access Control**.
3. In the right pane, expand **User Mode Access**, and then expand **Schedule Manager**. All functional sub-nodes can have their permissions edited, including **Custom Calendars**, **Schedule Sheets**, and **Activity Sheets**.
4. In the **Permission Settings** window, select **Add**. The User/Group Permissions window opens.
5. Select **Add Users/Groups**. The User/Group Picker opens.
6. Select the user(s) to whom you want to give permissions, and select **Add**. The system adds the name(s) to the Permission/Access Control window.
7. Under Permission Settings, select the permissions you want to grant the user(s), and select **OK**. The system adds the name(s) to the Permission Settings window.
8. Select **OK**.

Refreshing Schedule Sheet Data

A schedule sheet refresh updates cost data associated with the existing schedule sheet. During the refresh, the system recalculates dates, activity role rates, and costs if there were any changes to the schedule sheet, such as copying rows into the sheet. Alternatively, you can set up a schedule to refresh the sheet data automatically.

Note

A scheduled refresh can fail if (1) an activity has more than one CBS code, or (2) a cost sheet column to which a schedule sheet column is associated is deleted from the cost sheet.

To refresh schedule sheet templates manually:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Schedule Sheets**.
Schedule sheet templates that require refreshing are shown on the Schedule Templates log.
3. Select a template.
4. From the toolbar, select **Refresh** .

To set up a refresh schedule:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. On the Schedule Sheets log, select one or more schedule sheet templates.
5. Choose **Refresh**, and then select **Set Frequency**.
6. Select the **Enable scheduled refresh** checkbox.
7. Select the **Frequency** and the **Range of Recurrence**.
8. Select **OK**.

Manual Schedule of Activities

When auto-scheduling is *disabled*, you can manually determine the schedule of activities, if desired. You can do this by refreshing it through manual **Schedule** refresh or **Cost and Schedule** refresh or by enabling **Schedule** refresh.

When you refresh the schedule, the entire schedule sheet is re-scheduled, according to the latest dates entered in the **Activity Property**.

Updating Schedule Sheet Properties from Templates

If you create projects/shells with a template, you can update schedule sheet properties in the projects/shells from existing schedule sheets in the template. Both the source and destination schedule sheets must have the same name.

What an Update Accomplishes

What you can do with Schedule Sheet Update:

- Change the schedule's status (active/inactive)
- Change auto-control (on/off)

- Change auto-update options
- Change the scheduled refresh frequency
- Change the schedule's calendar
- Change the schedule start date, unless there are activities already in progress or completed
- Change activity level access
- Change Gantt chart bar labels and dates

Note

Updates of linked schedule sheets do not occur to sheets in projects/shells that have Inactive or View-Only status.

Calendars and Linked Schedule Sheets

When a schedule sheet is initially linked, any calendar associated with that schedule sheet is copied over with the sheet. However, when there are any subsequent updates to the linked sheet from a template, the calendar is not again updated on the sheet.

To update schedule sheet properties from project/shell templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. From the Schedule Sheets log, select the existing schedule sheet to push. Both the source and destination schedule sheets must have the same name.
5. From the toolbar, select **Update**, select **Properties**, and then select **Shell** or **All Shells**.
6. Select shells to update, and select **Update Shells**.
7. On the **Options** window, select the properties to update:
 - Description
 - Status
 - Auto-control: You can still manually initiate business processes. The system disregards predecessor/successor dependency relationships when you manually start an activity, even if auto-control is set to On in the schedule sheet properties.
 - Auto-Schedule
 - Calendar
 - Schedule Start Date: You can only change the schedule start date if there are no activities in progress or completed. Changing the start date can prompt the system to recalculate and roll up resource amounts.
 - Notify users or group on errors
 - Enforce Group Permission
 - Auto update activity status based on Actual Start/Finish Date
 - Activity Progress requires an Actual Start date
 - Schedule Refresh Properties

- Enforce Activity 100% Complete against Actual Finish date
 - Auto-Update % after entering Actual Finish Date
8. Select **OK**. You will receive a confirmation of the update. Select **OK**.

View schedule sheet properties update history

To view update history:

1. From the Schedule Sheets log, select the schedule sheet with the updates you want to see.
2. Select **Update**, and select **History**. The Update Shells History window opens. This window lists the update history for each submitted update.
3. Select **Close Window** when you are finished viewing the history.

Auto-Scheduling

If the auto-scheduling is *enabled* for the template, the properties (**Properties** is located under **Update**) in the destination Shell Schedule Sheets (with the same name as the template Schedule Sheet) will be updated. That is to state that the destination will also have automatic re-scheduling enabled and refreshed to reschedule the **Activity Data**.

If the auto-scheduling is *disabled* for the template, the properties (**Properties** is located under **Update**) in the destination Shell Schedule Sheets (with the same name as the template Schedule Sheet) will be updated. That is to state that the destination will also have automatic re-scheduling disabled.

The **Start Date**, **Duration**, or **Finish Date** of particular Activity can be changed upon template push, but because auto-scheduling is disabled, none of the changes will be reflected in dependent activities.

Updating Schedule Sheet Activities from Templates

If you create projects/shells with a template, you can update schedule sheet properties in the projects/shells from existing schedule sheets in the template. [Updating Schedule Sheet Properties from Templates](#).

You can also update the activities on a schedule sheet by using a separate "linking" function that links an existing schedule sheet to a template for the specific purpose of updating activities. This feature is also convenient if you have imported a schedule and want to push it to your projects/shells.

Note

Projects/shells that are in Inactive or View-Only status will not be updated.

What you can do with Linked Templates:

If you link a schedule sheet to a template in this way, you can use the template schedule sheet to push the following changes to sheet columns and activities:

- Imported CSV or MPP files to the destination sheet

- Added activities
- Changes to activity status
- Changes to column order
- Added new columns
- Removed column
- Hidden columns
- Column indents and outdents

What you cannot do with Linked Templates:

- Change schedule sheet properties, activity dates, CBS codes, or activity resources.
- Delete activities
- Modify activity name or code associations
- Modify Scope Management setup

After you link a schedule sheet to a template in this way, users can change dates and other data on the sheet, but they cannot add activities, delete activities, or otherwise change the structure of a sheet. You can only change the structure of the sheet and activities by changing the template and pushing the changes to the project/shell sheets.

Permissions

You do not need to have permission on the destination schedule sheet to update the sheet via a project/shell template schedule sheet. You must have the Edit Structure and Data permission to set up linked schedule sheets.

Enable and Disable Schedule Sheet Linking

Before you can link project/shell schedule sheets to a template for updating, you must enable the template for linking.

To enable linking for a schedule sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. On the Schedule Sheets log, select a **Schedule Sheet** template.
5. From the **Edit** menu, select **Sheet Linking**, and then select **Enable**.

To disable linking for a schedule sheet template:

1. On the Schedule Sheets log, select a **Schedule Sheet** template.
2. From the **Edit** menu, select **Sheet Linking**, and then select **Disable**.

Disabling Sheet Linking disconnects all project/shell schedule sheets from the linked template; the schedule sheets can no longer receive updates from the template.

Link a Template to a Shell Schedule Sheet

1. On the Schedule Sheet log, select the schedule sheet template that you want to link. This template must have been enabled for linking. (See [Enable and Disable Schedule Sheet Linking](#).)
2. From the **View** menu, select **Linked Schedule Sheets**. The Linked Schedule Sheets window opens, listing the schedule sheets that are currently linked to the template.
3. Select **Add**. The Add Schedule Sheets window opens. This window lists Active and On-Hold projects/shells and the corresponding active schedule sheets for those projects/shells.
4. Select one or more schedule sheets, and click **Select**. You will receive a confirmation message that the data in the newly linked sheet will be modified when the update is completed using the link between the template and the sheet. When you link a schedule sheet to the template, the system:
 - Deletes the existing data on the project/shell schedule sheet, including all activities, columns, and cell data
 - Retains the schedule sheet properties, including the Schedule Start Date
5. To link the sheets, select **OK**.
6. When you are finished adding linked sheets, select **Close Window**.

Update Linked Schedule Sheets from Shell Templates

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. On the Schedule Sheets log, select the Schedule Sheet template that should update the activities on the linked schedule sheets.
5. Select **Update**, and then select **Linked Schedule Sheets**.

The system will update the activities and columns on all the schedule sheets that are linked to the template. It will not, however, push changes to activity dates.

Impact on Scope Management

Scope Management setups that are updated through the use of linked schedule sheets allow updates to any activities that are not yet initiated. This includes business process name, responsible users, duration flag, completion conditions.

Unlink a Template From a Shell Schedule

1. On the Schedule Sheet log, select the schedule sheet template that you want to unlink.
2. From the **View** menu, select **Linked Schedule Sheets**. The Linked Schedule Sheets window opens, listing the schedule sheets that are currently linked to the template.
3. Select the sheet you want to unlink, and select **Remove**. The system will disconnect the schedule sheet from the template.
4. Repeat steps 2 and 3 for any other sheets you want to disconnect from the template.
5. When you are finished unlinking sheets, select **Close Window**.

View Linked Schedule Sheets

You can view a list of schedule sheets that have been linked to the template. These are the destination schedule sheets that update when you push changes from the template.

To view linked schedule sheets:

1. On the Schedule Sheet log, select the schedule sheet template.
2. From the **View** menu, select **Linked Schedule Sheets**.
Schedule sheets that are available for updating from the linked schedule sheet template are listed in the Linked Schedule Sheets window. Master schedule sheets are listed as well as non-master sheets.
3. When you have finished viewing the linked sheets, select **Close Window**.

Auto-Scheduling

If the user goes to the toolbar, selects **Update**, and selects **Linked Schedule Sheets**, only the **Activity Data** will get updated on the destination (linked) **Schedule Sheets** from the template, and not the sheet properties.

- If Auto-scheduling is *enabled* in the Linked (destination) Schedule Sheet, after the **Activity Dates** update is processed by selecting **Update** and selecting **Linked Schedule Sheets**, the re-scheduling will take place.
- If Auto-scheduling is *disabled* in the Linked (destination) Schedule Sheet, only the **Activity Dates** is updated and no re-scheduling occurs. That is to state that the change will be reflected in dependent activities.

Importing Schedule Files

Unifier supports working with schedule files such as Primavera. After you import these schedule files, your external data becomes available. In the application, users have access to the Schedule Manager's analytical tools. For example, they can forecast project costs, monitor project progress at the activity and resource levels, and track earned value with schedule data.

If users assign resources in non-Unifier software, Unifier will soft-book those resource assignments, provided you created a data set for those assignments (see [Add Data Set Values to a Pull-down \(Drop-down\) Menu or Radio Button](#)).

Overall steps to import schedule files

1. Save the schedule files.
For Primavera XML files:
 - a. Export the Primavera file to XML.
 - b. Modify the XML file to use with Web Services, as described in the *Unifier Integration Interface Guide*.
 - c. Select Import distribution data from external source (for more information, see Select the activity budget distribution profile).

For Microsoft Project files:

- a. Save the files as MPP, or export the Microsoft Project file to CSV or XML.

- b. Use this file as a template.
 2. Define data mapping.
 3. Import the MPP, CSV, or XML files to create or modify schedule sheet activities.

Primavera Considerations

For Primavera:

- Unifier Schedule Manager integrates with Primavera scheduling software by way of Web Services.
- Unifier retains the Primavera Current Data Date entry when calculating earned value (BCWS, BCWP, ACWP, EAC).
- When importing Primavera XML files into Unifier, you must configure the number of CBS code segments, and you can specify a suffix mask.
- Refer to the *Unifier Integration Interface Guide* for data elements you can use with Web Services.

Microsoft Project Considerations

Unifier uploads Microsoft Project (MPP) information directly into an existing schedule sheet.

- To use the Activity Calendar from Microsoft Project, first create a calendar in Unifier with the same name as the external calendar. For more information, see [Create a Custom Calendar in the Schedule Manager](#).
- To import Resource Assignments from Microsoft Project, first add the same MPP resource types to the SYS Resource Type data set in Unifier. Oracle recommends using MPP standard resource types: Work, Material, and Cost. (See [Working with Data Definitions](#).)
- Configuring CBS code segments is not necessary for Microsoft Project. See [CBS code options for Primavera XML and Microsoft Project XML](#).

Overall steps to import third-party schedule files

1. Save the third-party schedule files.
For Microsoft Project files (this is only available through the user interface):
 - Save the files as MPP, or export the Microsoft Project file to CSV or XML.
 - Use this file as a template (the MPP files do not require mapping).For Primavera XML files (this is only available through the Web Services):
 - Export the Primavera file to XML.
 - Modify the XML file to use with Web Services, as described in the *Unifier Integration Interface Guide*.
 - Select **Import distribution data from external source** (for more information, see [Select the activity budget distribution profile](#)).
2. Define data mapping.
3. Import the MPP, CSV, or XML files to create or modify schedule sheet activities.

Defining Data Mapping

Data mapping establishes a 1 to 1 association between fields in a Unifier schedule sheet and a schedule sheet, such as Primavera P6. The data map creates a CSV or XML file into which the data from the external schedule can be loaded. Once loaded with data values, these files can then be imported into a Unifier schedule.

You can create multiple data maps and select the data mapping you want to use when you import the schedule files to create or modify schedule sheet activities.

Note

You must create at least one mapping. Unifier will use this mapping as a default if there are no others.

Unifier supports multiple data formats: CSV, MPP, MPP XML, P6 XML. You must map any specific fields from an external source that you want to see in the application.

Data format	Data mapping requirements
CSV	Requires mapping. You can select the mapping when you upload the file.
MPP	Mapping is not required. Imported fields are limited to Start Date, Finish Date, and Duration. Do not select a default data mapping if you will be asking Unifier to consider an activity calendar.
Primavera XML	Requires default data mapping.
Microsoft Project SML	Requires mapping. You can select the mapping when you upload the file.

To define data mapping:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. From the Schedule Sheets log, open the **Schedule Sheet** template you want to map.
5. Choose **File**, and then select **Data Mapping**. The Data Mappings window opens. The Data Mappings window lists any mappings created for schedules such as Primavera P6 or Microsoft Project.

If a mapping on this list is marked as the default mapping, Unifier will use this mapping when the schedule is imported. If you do not mark a mapping as the default, Unifier will prompt the users to select a mapping whenever they import a schedule.

6. Select **Add**. The Data Mapping window opens.
7. On the General tab, enter the name and the description for the data mapping, and select **Apply**.
8. Select the **Activity** tab.
Use this tab to create the structure of the CSV or XML file for the export and import operations. On this tab, you can map schedule sheet columns to external CSV headers and XML tags to import or export activity information.
 - a. Select **Add**. Another data mapping window opens.

- b. Use the information in the first table below to complete the fields on this window.
9. (Optional) On the Resources tab, you can map resource information through XML integration. Enter the header in the XML element that corresponds to the column.

Note

Mapping resources is required only if you select Import Resource Assignments on the Options tab.

- a. Select **Add**. Another data mapping window opens.
- b. Select the column and enter the header in the XML element that corresponds to the column.
10. Select **Apply** on the Resources tab.
11. Select the **Options** tab. On this tab, you can configure XML options that are used when importing data.
12. Use the information in the second table below to complete the fields on the Options tab.
13. Select **OK**.

Data format	Data mapping requirements
Column	Select the data elements you want to import. Minimum required fields for XML import are Activity ID, Activity Name, Start date, Finish date, and Duration.
CSV Header	Enter the CSV header from the external source.
XML Element	Enter the XML from the external source

In this field:	Do this:
XML Import	Define options for importing XML activity schedules into Unifier. Importing data, from the Unifier Schedule Sheet, only supports Microsoft XML. The P6 XML is supported through Web Services.
Options	You can either retain existing schedule information in Unifier, or overwrite it complete upon importing an external XML file. - Merge into existing schedule. With this selection, you have a sub-option to Delete Activities removed from the source schedule. - Overwrite existing schedule replaces the existing schedule.

In this field:	Do this:
Data Elements	Select the appropriate checkboxes if you want to import activities (rows), Activity Dependencies: Select this checkbox to retain activities from the XML source file. Activity Calendar: Select this checkbox to retain the activity calendar from the XML source file. If imported, the activity calendar will trigger the recalculation of activity dates as needed, and will override any existing activity calendar association. If a calendar is not imported, the activity will use the existing calendar defined in the Schedule Sheet properties. There must be a calendar in Unifier with the same name as the calendar in the import file. Resource Assignments: Select this checkbox to retain the resource assignments from the XML source file. If you want to import resources, define the resource types for the data definition SYS Resource Type. For Microsoft Project files, use standard resource types: Work, Material, and Cost. Upon import, these resource types will soft book. CBS Codes: Select this checkbox to import CBS codes. See CBS code options for Primavera XML and Microsoft Project XML for details. Number of Levels: (for Primavera XML only) Specify the segments that should be considered in the Primavera XML file for the codes (from 1 to 9) and the CBS code suffix mask. See CBS code options for Primavera XML and Microsoft Project XML for details. Suffix Mask: (for Primavera XML only) You can use a constant or a data element value in the Suffix Mask. - To use a constant in the Suffix Mask, select Constant, and enter the suffix you want to have appended to the CBS code. - To use the value from a data element in the Suffix Mask, select Data Element and select a data element.
XML Export	Define options for exporting through XML into another application
Data Elements	Select the appropriate checkboxes if you want to export activities (rows), and whether to include dependencies, resource assignments, or CBS codes.

CBS Code Options for Primavera XML and Microsoft Project XML

Unifier can recognize the CBS codes imported through XML files and match these codes to equivalent codes in a project/shell cost sheet. For Primavera XML files, you need to specify the **Number of Levels** and a **Suffix Mask**. (The codes in Microsoft Project XML files are automatically resolved by Unifier when the file is imported.)

The number of levels specifies the number of segments that should be included to build CBS codes based on data from the Primavera XML file. The number of segments considered starts from the top of the imported XML file. If you specify multiple segments and the data in the XML file has fewer segments than that number, all segments are processed.

The **Suffix Mask** you enter is added to the CBS code elements that Integration derives from the XML file. The CBS code derived from the XML file with the mask is validated against the CBS codes (leaf level) created for the project/shell Cost Sheet.

While deriving the CBS codes from the XML file, Integration separates segments retrieved from the XML file with the cost code separator specified in uDesigner). When specifying the Suffix Mask, be sure to use the same cost code separator if the mask contains more than one segment.

Importing CSV, XML, or MPP files to create or modify schedule sheet activities

After you have saved the schedule files in an importable format (CSV, XML, or MPP) and defined the data mapping, you are ready to import the files into the existing Unifier schedule sheet template.

To import a CSV file:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. From the **Schedule Sheets** log, open the Schedule Sheet template into which you want to import the schedule. The Schedule Sheet template opens.
5. From the **File** menu, select **Import**, and then select **From CSV**.
When you import the file, you can select the data mapping you want to use for the importing files. If a default mapping was created, you will not have to select a mapping. If not, Unifier will display a Select Data Mapping window. If this window opens, select the data mapping you want to use for this import, and select OK.

The File Upload window opens.

6. Browse to select the CSV file to upload.
7. Select **OK**.

To import XML and MPP files:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**.
4. From the **Schedule Sheets** log, open the Schedule Sheet template into which you want to import the schedule. The Schedule Sheet template opens.
5. From the **File** menu, select **Import**, and then select **From External Source**.
When you import the file, you can select the data mapping you want to use for the imported files. However, in some cases, MPP files do not require that you select a data mapping.

If a default mapping was created, you will not have to select a mapping. If not, Unifier will display a Select Data Mapping window. If this window opens, select the data mapping you want to use for this import, and select OK.

6. Use the table below to complete the fields in this window.

7. Select **OK**. The File Upload window opens.
8. Browse to select the file to upload.
9. Select **OK**.

In this field:	Do this:
MPP	Data mapping is not required. Leave the Data Mapping field empty.
MPP XML	Data mapping is required. Select the mapping you want to use.
MPP activity calendar	Select Consider Activity Calendar.  Note This requires an existing calendar in Unifier with the same name. See Creating Multiple Calendars. If an activity calendar is not imported and considered, the activity will use the existing calendar defined in the schedule sheet properties.
MPP Resource assignments	Data mapping is not required; leave the Data Mapping field empty.  Note This requires a data set for the SYS Resource Type data element. See Add a Basic Data Definition. Use MPP standard resource types: Work, Material, and Cost. Upon import, Unifier will soft-book these resource types.

CBS code options for Primavera XML and Microsoft Project XML

Unifier can recognize the CBS codes imported through XML files and match these codes to equivalent codes in a project/shell cost sheet.

To enter the CBS code options:

1. On the Data Mapping **Options** tab, select the **CBS Codes** checkbox.
2. Enter the **Number of Levels** (from a minimum of 1 to a maximum of 9). This specifies the number of segments that should be included to build CBS codes based on data from the Primavera XML file. The number of segments considered starts from the top of the imported XML file. If you specify multiple segments and the data in the XML file has fewer segments than that number, all segments are processed.

Note

You must enter a specific number of levels if you select the CBS Codes checkbox. However, for Microsoft Project XML files, this value is ignored. The CBS Codes are resolved automatically by using the CBS code element in the Microsoft Project XML schema when the Microsoft Project XML file is imported.

3. Optionally, (for Primavera XML only) enter the Suffix Mask you want to use for the CBS code mapping. The mask you enter is added to the CBS code elements that Integration derives from the XML file. The CBS code derived from the XML file with the mask is validated against the CBS codes (leaf level) created for the project/shell Cost Sheet. While deriving the CBS codes from the XML file, Integration separates segments retrieved from the XML file with the pre-defined Cost Code Separator (previously defined under Data Definitions in uDesigner). When specifying the Suffix Mask, be sure to use the same Cost Code Separator if the mask contains more than one segment. You do not need to start the Suffix Mask with the Cost Code Separator. Unifier will add this separator to combine the CBS codes derived from the XML file and the Suffix Mask you enter.

You can use a constant suffix, or use the value of a data element as a suffix:

- To use a constant in the Suffix Mask, select Constant, and enter the suffix you want to have appended to the CBS code.
- To use a data element values in the Suffix Mask, select Data Element, and select a data element.

4. Select **OK**.

Primavera XML and Microsoft Project XML CBS Code interpretation

The data Unifier derives from the Primavera XML file consists of CBS Code segments, and activity and resource data. Upon import, a tree of CBS code elements is combined to form a CBS Code. Each element is a segment of a CBS code. The Activity element is attached to last node of the CBS Code segment. Activity Resource Assignment information is considered.

This is an example of CBS code structure during import from an XML file:

<CBS 1>

<CBS 11>

<CBS 111>

<Activity A>

In above example, actual CBS Code is <CBS 1>.<CBS 11>.<CBS 111>. Activity A contains a reference to its parent (<CBS 111>) CBS code segment. When processing the import of the XML data, Unifier first checks the Activity CBS code element and then builds the rest of the CBS code by moving up the CBS tree structure. In this example, Activity A has CBS 111 as a reference and Unifier uses the structure to build the CBS code as CBS 1.CBS 11.CBS 111.

After this CBS code is built, a Suffix mask (for Primavera XML files) is added to the beginning and end of the derived CBS code to create a Unifier CBS code. When this code is created, it is validated against the CBS code created in the project/shell Cost Sheet.

If an activity is moved from one CBS code to another CBS code, Unifier will move the activity during the XML file processing. If an activity or CBS code is deleted in the imported XML file, and the same activity exists in Unifier, Unifier will not delete that activity or CBS code.

Note

Importing data, from the Unifier Schedule Sheet, only supports Microsoft XML. The P6 XML is supported through Web Services.

Updating User Information in Schedule Sheet Properties Using Bulk Processing

You can use bulk processing to update user information in schedule sheet properties for a large number of sheets. This user data pertains to the groups or individual users who are notified of errors and also the groups who are given activity-level permissions. You can perform this bulk processing at the project/shell level.

Note

You can update 200 records at a time using bulk processing.

To add or remove user group assignments in bulk:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Company Sponsored Shells**, and select the applicable shell type.
3. In the log on the right pane, select the shell(s) that you want to update.
4. From the toolbar, select **Actions**, select **Export**, and then select **Export Schedule Sheet Properties**.
This will export the current properties for all the existing schedule sheets for the selected projects/shells to a CSV file.
5. Select **Open** to open the CSV file or **Save** to save the file to your desktop.
6. Modify the sheet in the CSV file as needed.
All column values are required, except for Notify Users and Notify Groups. Group and user names are separated by semi-colon (;).
7. Save the CSV file when you are finished modifying the user group assignments or adding new users.
8. Navigate back to the log, and from the toolbar, select **Actions**, select **Import**, and then select **Import Schedule Sheet Properties**.
9. Upload the modified CSV file, and select **OK**.

You will receive an email notification when the update is finished.

Scope Management Setup

Scope management is a framework that defines deliverables, responsible roles, and actual assignees and their schedules. In other words, Scope Management drives coordinated production of these deliverables. Scope Management initiates actions for producing deliverables based on the completion of dependencies. It routes them to the responsible

person/group, monitors their completion and updates deliverable statuses automatically. It manages different activities across schedules for different team members simultaneously.

Note

Scope Management is not available for launching non-workflow business processes.

This feature allows you to use existing Schedule Manager functionality with added data elements to automate the management of a project's scope and schedule with all associated activities, tasks, and deliverables. This feature provides project managers with the ability to manage each scope item's task assignments, ownerships, and durations.

Project managers can use Scope Management as the solution to manage high-volume, quick-turnaround projects that have standardized scope and scheduled activities. Examples of projects that would benefit from the use of Scope Management functionality are retail construction projects such as bank branches or chain fast food restaurants. Scope Management capabilities are also useful for large capital projects with complex scope and schedules, and that have numerous dependent activities and milestones with associated tasks and deadlines.

Scope Management coordinates the creation of the defined deliverables using the schedules of the various assignees, and automatically moves tasks to the next assignee. Scope Management then routes tasks related to the deliverables to the next responsible assignee (person or group), monitors the state of the tasks, and updates deliverable status automatically. Actions for the creation of deliverables are based on fixed time durations and the completion of dependencies.

This functionality can be enabled on any existing schedule sheet, including a Master schedule sheet. Scope Management enables you to link BPs with schedule sheet task activities and route those BPs, with automatic update of status as they are routed and worked on. The BPs represent the work that needs to be done to complete the task. Also, you can override the automatic routing at any time and launch the activity-associated BPs manually. The BP-related task is deemed done when specified completion conditions are met.

Setting Up Scope Management for Activities

Using existing project/shell-level schedule sheet templates, you can set up the following for each activity:

- Linked BP
- Responsible users or groups
- Due date
- Completion conditions

To set up Scope Management for an activity:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**. The Schedule Sheets log opens.
4. Select the template from the log, and select **Open**. The schedule sheet template opens.

5. To set up scope management for the template, use the instructions in the *Unifier Managers User Guide* on setting up scope management for activities.

About activity-level editing

At the project shell level, you can configure the Schedule Sheet so that specific cells can be edited only by designated groups of users. In a project, the project manager is usually responsible for the entire schedule, with various activity owners responsible for managing dates on specific project tasks. Enforcing activity-level editing controls the users and groups who can edit certain data, such as group-specific start and finish dates for activities.

Note

- You can set up the activity-level editing restrictions in a template, and the editing control configuration will be copied into any schedule sheet created from that template.
- The system will ignore any data imported through CSV or XML for restricted fields. If there is any failure in validation, the system will stop the import.
- The Gantt Chart will be disabled if the Start, Finish, and Duration fields are restricted.

Activity-level editing allows the project manager and other activity owners to collaborate on a project and discuss the impact of changes to start and finish dates across the entire schedule. This collaboration allows the project manager or activity owners to enter new start and finish dates for activities without immediately affecting the start and finish dates for all activities. The editing restrictions prevent the proposed dates from affecting the entire schedule before the dates are approved or adjusted. Only those users with appropriate permissions can edit restricted dates.

Note

Updates that occur from Activity Sheets are also subject to activity-level editing restrictions if the restrictions are configured on the corresponding schedule sheet, as are updates from CSV import or Web Services Integration.

The following table shows an example of the impact on dates in a schedule sheet with activity-level editing configured, and with activities and group-specific date columns. In this example, the groups Const, IT, and ATM all have group-specific start dates and finish dates for activities:

Activity	Start Date	Finish Date	Const Start Date	Const Finish Date	IT Start Date	IT Finish Date	ATM Start Date	ATM Finish Date
Activities owned by Const Group	Project manager can edit these dates		Const Group can edit these dates					
Activities owned by IT Group					IT Group can edit these dates			
Activities owned by ATM Group							ATM Group can edit these dates	

A less restrictive implementation of activity-level editing allows specific groups to edit all cells in selected rows. In this implementation, when project manager changes activity start or finish dates, those changes could affect other dates in the schedule, due to dependencies among the activities:

Activity	Start Date	Finish Date	Other data in the schedule sheet
Project Manager can edit the cells in this row	Project Manager can edit these rows		
Activities owned by Const Group	Const Group can edit these rows		
Activities owned by IT Group	IT Group can edit these rows		
Activities owned by ATM Group	ATM Group can edit these rows		

Setting Up Activity-level Editing

Before you set up activity-level editing:

- Be sure the Activity Attribute Form has been designed to include the Filtered Group data element and any group-specific start date and finish date data elements.
- Be sure the Add the Filtered Group data element and any group-specific date data elements have been included as columns on the existing Schedule Sheet.
- Create the groups who should have permissions for activity-level editing. For more information, see User Administration. Be sure not to include the project manager in any of these groups (as the group manager, for example), as this will result in conflicting permissions if later you add any restrictions to the columns schedule sheet.
- Give these groups the View All Sheets permission for the existing Schedule Sheets for the project/shell. Do not grant Full Access permissions, as that will override any activity-level configuration to restrict editing.

To set up activity-level editing:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell type], and open the [shell template].
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**. The Schedule Sheets log opens.
4. On the **Schedule Sheets** log, select the schedule sheet.
5. From the toolbar, select **Permission**. The Edit Permission window opens.
6. Add the group or groups for activity-level permissions and specify **Edit Data** in the Permissions section of the window.
7. Give the project manager **Modify Permission**.
8. Select **OK**.
9. From the toolbar, select **Properties**.

10. On the **General** tab, select the Permissions: **Enforce Activity Level Permission by Group** checkbox and select a **Default Group** from the drop-down list.
11. Open the schedule sheet (either in the template or in the project/shell).
12. Under the **Filtered Group** column, select the activity for which you want to specify editing.
13. From the drop-down list, select the group you want to have activity-level editing permission.

The group selection you make in the activity row controls the access for editing that activity. For example, if you select IT Group as the Filtered Group for an activity, only users who are members of the IT Group can modify data for that activity (in that row).

Note

For a less restrictive, row-level implementation of activity-level editing, you can stop here and not perform the next step, which provides further restrictions to the cell level.

To set up more cell-level editing restrictions:

In addition to activity-level editing permissions, and can use column restrictions to enforce that only certain groups can edit certain cells. For example, for project managers, you could restrict the group-specific date columns only. For the activity-owner groups, you could restrict access to all columns except for the group-specific date columns. For example, for the IT Group, you could restrict access to all columns except for IT Start Date and IT End Date.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and open the **[shell template]**.
3. In the left Navigator, select **Schedule Manager**, and then select **Schedule Sheets**. The Schedule Sheets log opens.
4. Open the schedule sheet you want to restrict.
5. From the File menu, choose **Restrictions**. The Restrictions Setup window opens.
6. Under User/Group Name, add the user or group name whose access you want to restrict.
7. Under Activity Restriction Settings, choose the fields on the sheet that you want to restrict.
8. (Optional) Under Resource Assignment Restriction Settings, choose the resource-related fields on the sheet that you want to restrict.

Permissions for the System WBS Sheet

Currently, the Unifier administrator can grant the Modify and View permissions for the System WBS Sheet that is auto-created through gateway integration from P6 or Oracle Primavera Cloud.

The **WBS Sheet** permission allows the user to create a manual WBS Sheet, if one does not exist. By default, this permission will be deselected. This permission can be selected for any user or group.

To grant permission to create a manual WBS Sheet from the log to capture the work breakdown structure for the project:

1. In the left Navigator, select **User Administration**, and then select **Access Control**.

2. In the right pane, expand **User Mode Access**, and then expand **Activity Manager**.
3. Select **WBS Sheet** to open the **Permissions Settings for: WBS Sheet** window.
4. Select from the following permission settings:
 - Modify
 - View
 - Hide Audit Log
 - Create Manual WBS Sheet

The "Modify" and "View" permissions are available for System WBS Sheet.

A user with "Modify" permission can do the following in a manual WBS Sheet, as well as conducting edits on a System WBS Sheet:

- Manage WBS
 - Add new WBS rows
 - Update existing WBS rows
 - Delete the WBS rows that are not used
 - Update column structure

A user with "View" permission can do the following in a manual WBS Sheet and System WBS Sheet:

- View the data including WBS details and transaction details for costs.
- Switch between manual WBS Sheet and System WBS views, by using the Project field (drop-down).

Setting Up the Earned Value Management Permissions

If you have access to the Earned Value Manager (EVM) feature, you can assign Earned Value Management permissions in the following permissions-related modules:

- **Permission Templates** under **Standards & Libraries**
- **Access Control**, and **Users / Groups** under **User Administration**

Permissions correspond to the:

- **Activity Manager** and its sub-nodes
- **Earned Value Analysis** in shell (**User** mode)
- **Master Rate Sheet** in the **Company Workspace** (**User** mode).

In addition, configuration permissions are required to set up integrations from Oracle Integration, or from Gateway to set up the synchronizations at the **Company Workspace** (**Admin** mode) level.

Assumptions

Permissions for other related areas (**Exchange Rates** under **Standards & Libraries**) are granted at the **Company Workspace** (**Admin** mode) level, and permissions to modify properties of the shell types under Company Sponsored Shells are also given.

The **Permission Settings** values for the Earned Value Analysis Report (EVA Report) are:

- **Full Access**
- **Create**
- **View**
- **View and Run**

Gateway Permissions

The permissions for **Gateway** are as follows:

- **Configure**
- **Get/Send Activity Sheet Data**

Oracle Integration Permissions

The permissions for **Oracle Integration Cloud** are as follows:

- **Configure:** Users can set up Unifier to use integrations from Oracle Integration to update Manual Activity Sheets, System Activity sheets, and the Master Rate sheet.

- **View:** Users can only view the integrations from Oracle Integration that have been configured in Unifier.

Master Rate Sheet Permissions

The permissions for **Master Rate Sheet** are as follows:

- **Get Data:** If this permission is enabled, the user can use the **Get Data** option for the Master Rate Sheet (**Company Workspace**), which will update the roles and resources list from P6 or Oracle Primavera Cloud. When Get Data is checked, the "View" permission gets checked automatically. You can clear the "View" permission, which automatically deselects the "Get Data" permission. Thus, the user cannot have "Get Data" permission without the "View" permission but can have "View" permission without the "Get Data" permission.
- **View:** If this permission is enabled, the user can view the **Rate Sheet** node in the **Company Workspace** along with the Master Rate Sheet present in that node (if applicable).
- **Create:** If this permission is enabled, the user can create the Rate Sheet and Master Rate Sheet.

Activity Sheet in Shell (User Mode) Permissions

The permissions for **Activity Sheet** in a shell (**User mode**) are as follows:

- **Send Data:** If this permission is enabled, the user can use the Send data option to update manual activity sheets, and system activity sheets in P6 or Oracle Primavera Cloud.
- **Get Data - Current and Baseline:** If this permission is enabled, the user can use the Get Data option for the system Activity Sheet, which will update the system Activity Sheet from P6 or Oracle Primavera Cloud. When Get Data is checked, the "View All" and "View Current" permissions are not selected automatically. You can deselect the "View" permission. This automatically deselects "Get Data" permission. Thus, the user cannot have "Get Data" permission without the "View" permission but can have "View" permission without the "Get Data" permission.
- **Get Data - Current Only:** If this permission is enabled, when the user selects **Get Data**, the user can only get the current project data from P6 or Oracle Primavera Cloud; the user cannot get the baseline project data from P6 or Oracle Primavera Cloud.
- **Modify - Current and Baseline:** If this permission is enabled, the user can modify both baseline and current P6 project data. The user is also given the **View-All** permission implicitly even if the permission is not selected.
- **Modify - Current Only:** If this permission is enabled, the user can only modify the current P6 project data. The user is also given **View - Current** permission implicitly even if the permission has not been selected.
- **View - All:** If this permission is enabled, the user can view both baseline and current P6 project data in the **Activity Sheet**.
- **View - Current:** If this permission is enabled, the user will be able to view the Activity Sheet sub-node along with the Activity Sheet present in that node (if applicable).
- **Full Access:** If this permission is enabled, the user will get full access to the Activity Sheet with all the permissions mentioned above. In addition, the user can see the schedule tab, where the user can schedule the Gateway synchronizations.

- **Create Manual Activity Sheets:** If this permission is enabled, the user will be able to:
 - Create, update, delete, and view all sheets.
 - Receive and send the scheduling and resource spread data into the Activity Sheet from P6 or Oracle Primavera Cloud.

Rate Sheet in Shell (User Mode) Permissions

The permissions for **Rate Sheet** in a shell (**User** mode) are as follows:

- **Full Access**
- **Create**
- **View:** When selected, this will allow the user to view the **Rate Sheet** node and the Rate Sheets present in the associated log.

Earned Value Permissions

The permissions for **Earned Value** are as follows:

Permission	Description
Full Access	When selected, this will allow the user to access all attributes of the Earned Value functional node.
Modify	When selected, this will allow the user to make edits to items in the Earned Value functional node.
View	When selected, this will allow the user to view the Earned Value functional node with the list of records.

To grant permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **User Mode Access**, expand **Projects/Shells**, and then expand **Cost Manager**.
4. Select **Earned Value** to open the **Module Permission Settings** window.
5. Select **Add** to open the **Permission/Access Control** window.
6. Select **Add Users/Groups** and add users, or groups, or both.
7. In the **Permission Settings** block, select the necessary permissions, and select **Add**.
8. When finished, follow the prompts to close windows and complete granting permissions.

OBS Sheet Permissions

To grant access, go to **Access Control** and select the **OBS Sheet**.

The following permissions are available:

- **Create and Add Users to Project:** Allow user to bring in active users from template or from an existing project while creating OBS Sheet from template or from project.

- **Create:** Allow users to create an Organization Breakdown Structure (OBS) sheet by copying from template or project or create a new structure.
- **Modify:** Allows users to edit an existing structure.
- **View:** Allow users to view the OBS sheet.
- **Hide Audit Log:** Allow users to see audit if the permission is not enabled.

WBS Sheet Permissions

To grant access to the Work Breakdown Structure (WBS) Sheet, go to **Access Control** and select the **WBS Sheet**.

The following permissions are available:

- **Modify:** Allows users to edit WBS Attributes (including CSV Import) and view the WBS Sheet.
- **View:** Allow users to view the WBS Sheet.
- **Hide Audit Log:** Allow users to see audit if the permission is not enabled.
- **Create Manual WBS Sheet:** Allow users to create a manual WBS Sheet.

Setting Up the Space Manager

The Space Manager is where you can perform the tasks of facilities management.

Note

You cannot view .DWF files in Google Chrome or Mozilla Firefox browsers.

Using the Space Manager, you can gather data about the levels in your facility (such as floors and parking lots) and the spaces that exist on each level (cubicles, offices, conference rooms, and so on). Categories (called types) of spaces can be designed in uDesigner, and you can then add records of individual spaces to these types and manage them on an electronic sheet.

The Space Manager is a means of organizing all the square footage in your facility to make monitoring, maintaining, and revising your facility more efficient. The Space Manager can be integrated with other managers or business processes (BPs) to give you a broader view of your company's physical capital and resources.

In uDesigner, one attribute form is designed for a “level” type in your facility and multiple attribute forms for “spaces” types. With these attribute forms, you can create a hierarchy of levels and spaces within levels to store the facilities data you choose to collect.

Note

- In the Space Manager, think of a level as the “platform” on which spaces reside.
- Configuration of the Data Picker and Data Elements (and when applicable: Unique and Auto Sequence settings) must be done in uDesigner.

The **Levels Sheet** node in the Space Manager stores the manager sheet (Levels Sheet) on which all the levels in a specific shell are shown. The system automatically creates a Levels Sheet for every level type that is created. The sheet helps you manage levels and spaces and lets you create formulas to calculate total leasable and rentable space for a facility or building. From the Levels Sheet, you can also automatically update individual level records with data added to the sheet, either manually or via a formula created for a column.

The **Stack Plans** node is where you can create stack plans to show the actual usage of the levels in the company's buildings. You can choose the information (data elements or specific spaces) you want to see on the stack plan and update the plan periodically to keep abreast of changes in the levels' space usage. For example, you might want to know the square footage used by each department on each floor (level) or how many square feet of a floor are vacant versus leased.

The **Levels** node lists all the levels that exist in a specific shell. This is where you can create levels or update existing ones, import data from CSV or Microsoft Excel files, or export templates to CSV or Excel.

The **Spaces** node shows a list of all the space types, and under the space type sub-node, all the spaces that exist in a specific shell. This is where you can create spaces or update existing ones, import or export data from CSV or Excel files, and select spaces to view on the level drawing.

The Space Manager allows you to identify floors and each space by type and associate attributes to the particular spaces. For example, a multi-floor building could have many types of spaces, such as offices, cubicles, restrooms, conferences room, laboratories, and eating areas.

You manage spaces according to space type. Examples of space types are:

- Gross measured area, which is the entire square footage of a floor, from wall to wall
- Common area, such as hallways, lobbies, and entrances
- Usable space, such as cubicles, offices, and conference rooms
- Vertical penetration, which includes elevators, stairwells, and columns

The Space Manager is available within a shell. Each shell can have only one Space Manager and one corresponding Levels Sheet. A building is at the shell level. An example hierarchical arrangement of objects in the Space Manager is as follows:

- Buildings (shell level)
 - Levels (Floors) of the building or other similar structures (in this case, Floor is an example of a level record)
 - * Spaces in the building. These are the various spaces in the structure, such as storage rooms, offices, and other interior spaces (space records). Spaces is a fixed node designed in uDesigner.

Space Manager Prerequisites

The following is a list of prerequisites:

- Generic or CBS shells configured
- Level and Space Attribute Forms defined in uDesigner

Importing and Configuring Levels and Space Types

Importing and configuring levels and space types for the Space Manager consists of the following steps:

Step 1: Import level and space types. Levels and space types are created in uDesigner.

Step 2: Configure the level and spaces. This configuration enables these types to be set up.

Step 3: Setup Levels Sheet Templates

Step 4: Create stack plan templates

Step 5: Set permissions. After setting up and configuring levels and spaces, you must set User mode permission to all users who will need to work with these components of the Space Manager.

To create levels and space types, the Space Manager module must be loaded. Contact the Company or Site Administrator.

The Space Manager can have only one level type design but multiple space type designs. You have to first deploy the level design in uDesigner before deploying any Space type designs.

To import and deploy a Level or Space Attribute Form into Unifier **Production** environment, see [Importing Configuration Packages](#).

Configuring Levels and Space Types

Level and Space configuration allows you to activate the level and space types for use in the Space Manager.

To access the level and space configuration log:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Space Manager**. The Configuration - Space Manager log opens. The log lists the level and space types that were imported into the system.
The newly imported level and space types are inactive by default and can be activated during configuration.

Configuring a Level or Space Type

The following describes how to activate a level or space types.

To configure a level or space type:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Space Manager**. The **Configuration-Space Manager** log opens, displaying the level and space types that have been imported into your company.
3. Select a level or space type, and select **Open**. The Configuration window for the level or space type opens.
4. Complete the **General** tab. In this tab, you can add a custom Help file and change the status of the level or space type to Active.
5. Select the **Options** tab. This tab is optional; it allows you to customize the layout of a PDF document leveraging the XML style design format.
6. Select **OK**.

Configuring Fill Colors and Text for Space Types

You can configure fill colors and text for uCAD drawings to support visual analysis of the drawings to facilitate space planning. For example, users might want to see a floor plan with each space type on that plan highlighted in a different color based on the department using that space.

To configure fill colors and text for a space type:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration**, and then select **Space Manager**. The **Configuration-Space Manager** log opens, displaying the level and space types that have been imported into your company.

3. Select a space type, and select **Open**. The Configuration window for the space type opens.
4. For space types, select the **Options** tab. On this tab, you can enter information regarding spaces that enables users to color code spaces shown in uCAD. Users can also specify the display text that will appear on drawings.
5. Complete the CAD Drawing Options as described in the table below.
6. Select **OK**.

In this field:	Do this:
Default Color	Click Select to specify the color codes used by default when displaying spaces of this type. The system default is white (no color). You can select a color from the 255 color code palette. This ACI color is converted to the corresponding HEX HTML color. The default color is used for space outlines.
Text Element Sort	Click Select to specify the sort order of the data elements in the space log, as defined in uDesigner. You can use Add to select the data elements to display and select a data element and select Remove to delete data elements from the list of displayed data element text. Use Move Up and Move Down to re-order selected data elements. Also, you can re-order the data elements by editing the Row number, and selecting Update Order to refresh the window. Select OK to exit the Data Element window.
Fill Display Elements	Click Select to specific the drop-down list data elements (Input Type Pull-down Menu) that are available to be used for visual analysis with the color code palette, and to specify a color for each value in the Data Set for that Pull-down Menu. Select a Data Element and select Enable Fill By. Select colors for the data element data set values. Select OK .

Configuring Space Manager Configuration Package

The following configurations can be included in the Space Manager Configuration Package:

- General setup
All the fields included in the General Configuration (General tab).
- Custom Print
Word and PDF templates, if any.
- BIP Custom Print
All the Oracle Analytics Server Custom Print in the Custom Prints and Reports.
- Space Attributes
The content of the Options tab for Space Attributes, including Default Color, Text Element Sort, and Fill Display Elements.

Note

If you do not select the Data Structure setup option at the time of creating the Configuration Package, the Data Definition selected in the Fill Display Elements field will not contain the Value or Label data sets and only the colors can be seen.

For more information, see [Configuration Package Management](#).

Creating Levels Sheet Templates

To open a Levels Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell template]**, and open the **[shell instance]**.
3. In the left Navigator, select **Space Manager**, and then select **Levels Sheet**. The Level Sheet Templates log opens. There is one Levels Sheet per shell.
4. Select the sheet in the log, and select **Open**.

To open the Levels Sheet properties window:

In the Levels Sheet log, select the sheet, and select **Properties**.

To create a template for a Levels Sheet:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell template]**, and open the **[shell instance]**.
3. In the left Navigator, select **Space Manager**, and then select **Levels Sheet**.
4. From the toolbar, select **New**. The Levels Sheet Properties window opens.
5. Enter an optional description. You cannot change the sheet title.
6. Choose whether to include all levels on the sheet or just levels with selected statuses.
7. Select **OK**.

To add columns to a Levels Sheet template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell template]**, and open the **[shell instance]**.
3. In the left Navigator, select **Space Manager**, and then select **Levels Sheet**.
4. Select the sheet, and select **Open**.
5. Select **Columns**. The Columns Log opens.
6. Select **New**. The Column Definition window opens.
7. In the **Datasource** drop-down list, select the data source to use. The list includes the data elements found on the level forms.
8. For **Entry Method**, choose how information is entered in the column. The choices depend on the data source selected.

9. For **Data Format**, select the format for numeric columns. The options are:
 - **Show as Percentage**: Displays data in percentage. For example, if 0.25 is entered, it displays as 25%.

Note

When entering the percentage values in your sheet, if you are working in Classic View, enter the value by using decimal number format. For example, for ten percent, enter: 0.1, and if you are working in Standard View, enter the value by using percent format. For example, for ten percent, enter: 10%. The value the system uses to validate the value of the Percentage column, when applicable, will be: 0-100.

- **Decimal Places**: Select the number of decimal places to display. If the data element was defined in uDesigner with a specific number of decimal places, it will override any decimal places you specify here.
10. For **Display Mode**, select **Hide** to make the column invisible to users or **Show** to display it.
 11. For **Total**, select what is shown in the bottom summary row for each column. The options are:
 - **Blank**: Summary row is blank.
 - **Sum of All Rows**: Displays the sum total of all row values for this column.
 - **User Formula Definition**: Displays the result of the formula entered in the Formula field.
 12. For **Average**, select **Blank** or the average of all rows.
 13. For **Column Position After**, select a column from the list to specify its position on the sheet.
 14. Select **OK**.

Creating a Stack Plan Template

A stack plan is a two-dimensional graphical display of facility or building data. Usually, these graphs display area calculations by different attributes (for example, rented, leased, vacant, occupied by a tenant). Stack plans allow users to view area information across all building levels or floors based on defined attributes. Stack plans display only space records. With permissions, users can create or modify a stack plan under a shell.

To create a stack plan:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell template], and open the [shell instance].
3. In the left Navigator, select **Space Manager**, and then select **Stack Plans**.
4. From the toolbar, select **New**. The Properties window opens.
5. Complete the **General** and **Options** tabs as described in the table below.
6. Select **Apply** to save changes, or **OK** to save and exit.

In this field:	Do this:
Name	Enter the stack plan name.
Description	Enter an optional description.
Include: - All Levels - Levels with statuses	Select to specify that all levels be included in the stack plan, or that only levels of selected status be included in the stack plan.
Space Types	Select a space type.
Stack By: - Space Type - Data Element	Select whether to stack by selected space type or by a data element.
Stacking View	Select to specify standard stacking or 100% stacking.
Sort Floors By:	Select to sort floors by a selected data element from the Level Attribute Form.
Show Legend	Select to display a legend for the stack chart.
Conditions	Add a condition to filter the number of space records included in the stack plan calculation. The stack plan calculation logic sums up the values from the uu_area data element used on the space-type detail form.

To modify stack plan properties:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell template], and open the [shell instance].
3. In the left Navigator, select **Space Manager**, and then select **Stack Plans**.
4. Select a stack plan.
5. From the toolbar, select **Properties**. The Properties window opens.
6. Modify the stack plan properties as needed.
7. Select **OK**.

To update a stack plan across shells:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the [shell template], and open the [shell instance].
3. In the left Navigator, select **Space Manager**, and then select **Stack Plans**.
4. Select a stack plan in the log.
5. From the toolbar, select **Update Shells**. You can choose to update the stack plan in selected shells, or all shells.

Setting Permissions for the Space Manager

You must set the user permissions for the various components of the Space Manager. The Space Manager components are:

- Sheets
- Stack Plans

- Levels
- Individual space types

To set the Space Manager components permissions:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **User Mode Access**, and then select **Space Manager**. The permissions for each component are:
 - **Sheets**: Create, Modify, View
 - **Levels**: Create, Modify, View, Allow Bulk Edit
 - **Spaces**, select **All**, and then select **[space types]**: Create, Modify, View, Delete, Allow Bulk Edit
 - **Stack Plans**: Create, Modify, View

Note

Users with Modify permission can import drawing files into a level record.

Query Tabs in Spaces

The Query tab allows access to all BP records, related to Space, by way of Query-based Tab (QBT). For example, to see all approved BPs related to your Space, use the QBT to query/ fetch those records. After a Query-based Tab (QBT) is successfully created and deployed using uDesigner, the BP Query Tabs appear in the required Space, in User mode.

As a pre-process to defining the Query Tab in the Space, use the Space picker in one of the upper forms of the BP from where you want to create the Query Tab. For defining a Query Tab, select the Query Tabs link in uDesigner, select New, and select a Business Process. The system allows you to create a maximum of 8 Query Based Tabs in uDesigner. To define a Query Tab, go to uDesigner:

1. Select **Query Tabs**.
2. Select **New**.
3. Select a BP.

Note

You can use the Space picker (uuu_phy_space_picker) for the Query Tabs in the Upper form of the Business Process (BP), where you want the Query Tab to originate from.

All the functionalities that are available with Query Tabs for Business Processes (BPs) are also available for the Space Manager.

The Query Items sub-node under the Space Manager node (go to the Company Workspace tab, and switch to Admin mode; in the left Navigator, select uDesigner, select Space Manager, and then select [Space]) allows you to include references to other BPs in a form of a Query-based tab.

Within a selected Space, the Query Items sub-node provides the following two links:

- Query Tabs
- Summary Elements

Query Tabs

After a Query-based Tab (QBT) is successfully created and deployed using uDesigner, the BP Query Tabs appear in the required Space, in User mode. You can use the Query Tabs sub-node to define and maintain the various Query Tabs that are defined within the Space. For more information, see *Locating and Opening Space Records from Within a Level Record and Creating a Space Record*.

General Tab

In the General tab, you can enter the name, description, and reference picker for the required QBT BP.

In case, you have already included the Space picker in the Upper form of the BP, the Space picker appears in the drop-down list of the reference picker. In this case, the Name field is populated with the name of the BP, but you can change the name of the QBT, if necessary. The name and reference pickers are required fields on the General Tab, so you cannot create a QBT if you have not included the Space picker on the Upper form of the BP.

Query Tab

The Query Tab of the QBT is used to create a query to filter the results, displayed within the QBT, based on any particular condition.

Note

It is not required to have a query, so in case no queries are defined all records display in the QBT, in User mode.

You can define multiple queries within the Query tab.

After you finish adding values in both General and Query tabs, select **Save**. The Query Tabs log allows you to:

- See all the Query Tabs
- Create a new QBT (New).
- Open an existing QBT to review or change content (Open).
- Delete an existing QBT (Delete).
- Rearrange the ordering of the QBTs that are displayed (Tab Order).

Summary Elements

You can use the Summary Elements on the Detail form of the Space to show the data that is being exchanged. You can use all existing types of Summary Elements (Average, Count, Total, Maximum, and Minimum) in the QBT.

You can define multiple Summary Elements. To create Summary Elements:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.

2. In the left Navigator, select **uDesigner**, select your space **[Space]**, and select then **Summary Elements**.
3. Use the Space QBT to create your Summary Elements.
4. After defining the Summary Elements, select **OK** to save.

The Summary Element log allows you to:

- See all the Summary Elements.
- Create a new Summary Element (New).
- Open an existing Summary Element to review or change content (Open).
- Delete an existing Summary Element (Delete).

After you create the Summary Elements, you can include them in the Detail form of your space [Space].

Setting Up the User-Defined Reports

These are the recommended steps to set up the User-Defined Report (UDR) functionality:

Step 1: Create a UDR template.

Step 2: Create project/shell UDRs.

Step 3: Create a company UDR.

Creating and Setting Up a UDR Template

Report templates lets you create templates that a user can then copy from to create User-Defined Reports (UDRs). Report templates are based on specific data types and pre-defined data elements that differ depending on the data type. In addition to creating system-based report templates, you can also create permission-based report templates.

Report templates define queries used to search the database for transaction or Project/Shell data and report layout.

You can create UDR templates for the following UDR report types:

- Tabular
- Cross Tab
- Summary
- Alert

UDR Data Types

The following table summarizes data types in user-defined reports. Data types also include project/shell-level and company-level business processes, asset classes, planning items, and sheets. The "x" in a column indicates that the information comes from that source, not where the report is written. (Company UDRs can access project/shell data sources.)

Data Type	Project UDR	Shell UDR	Company UDR	UDR Template	Use for Maintenance Management Only
Accounts Sheet			x		
Active Task Information	x	x	x	x	
Asset Summary Sheet			x		
Audit			x		x
Commitment Summary	x	x		x	

Data Type	Project UDR	Shell UDR	Company UDR	UDR Template	Use for Maintenance Management Only
Company Cash Flow			X		
Company Cost			X		
Company User Information			X		
Cost Sheet - CBS	X	X		X	
Cost Transactions - CBS	X	X		X	
Cost Transactions MC - CBS	X	X			
Data Views	X	X	X	X	
Document Manager	X	X	X	X	
Document Manager—Company			X		
Equipment			X		X
Funding	X		X	X	
Gates	X	X		X	
Inventory			X		X
Inventory On-hand Detail			X		X
Item Master			X		X
Job Plan			X		X
Master PM Book			X		X
Master PM Meter Schedule			X		X
Master PM Time Schedule			X		X
Material Transaction			X		X
Partner User Information			X		
PM Book			X		X
PM Meter Schedule			X		X
PM Time Schedule			X		X
Resource Booking	X			X	
Resource Manager—All Actuals			X		
Resource Manager—Allocated Roles	X			X	

Data Type	Project UDR	Shell UDR	Company UDR	UDR Template	Use for Maintenance Management Only
Resource Manager—Booked Resources	x			x	
Resource Manager—Project Actuals	x			x	
Resource Manager - Resources (Company)				x	
Resource Manager—Roles			x		
Resource Manager—Sheets	x			x	
Service Center			x		x
Service Request			x		x
Schedule of Values	x	x	x	x	
Shell or Project Cash Flow	x	x	x	x	
Shell or Project Cost	x	x		x	
Shell or Project Groups	x	x		x	
Shell or Project Information	x	x		x	
Shell or Project Users	x	x		x	
Workflow Information	x	x	x	x	
Work Order			x		x
Work Order Items			x		x
Work Order Role			x		x
(Asset class name)			x		
(Business process name)	x	x	x		
(Planning type name)			x		

Note

The COST SHEET - CBS data source does not support the formula columns. Use the Project/Shell Cost data source to view the formula column values.

Accessing UDR Templates

To access **Shell** UDR templates:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Shells**, select the **[shell type]**, and then open the **[shell template]**.
3. In the left Navigator, select a shell to open the log, select a shell from the log, and select **Open**.
4. In the left Navigator, select **Reports**, and then select **User-Defined**.

The **User-Defined Reports** log for the (Shell UDR templates) contains all the UDR templates that have been defined for a specific Company.

The **User-Defined Reports** log contains the following menu options:

Menu	Description
File	Lets you create a report (New), copy a report template (select Copy , and then select Template), open a selected report (Open), Update Shell Templates , or Update Shells .
Edit	Lets you delete (Delete) a selected report.
View	Lets you choose to view all the reports (All), find a particular report in the log (Find), view a set of saved parameters (Saved Results), and access the audit log (Audit Log).
Help	Lets you access the following: • User Help • Admin Help • uDesigner Help • Unifier Library • User Productivity Kit

The **User-Defined Reports** log contains the following toolbar options:

Option	Description
New	Lets you open the Create a new report window for system or permission-based data sources, and create a report by way of entering the following data: • Data Type • Element • Report Type (Tabular - Cross Tab - Summary - Alert) • Access Type
Copy	Lets you copy a report or report template (select Copy , and then select Template).
Open	Opens a report.

Option	Description
Edit	Opens the Edit Report window, which contains the following tabs that let you change, enter, or select various data about a report: • General tab • Data Elements tab • Query tab • Layout tab • Shells tab • Permission tab • Schedule tab
Delete	Lets you delete a selected report.
Find	Lets you find a particular report in the log.
Update Shell Templates	Lets you push report template changes to multiple shell templates.
Update Shells	Lets you push report changes to multiple shells.

The **User-Defined Reports** log contains the following columns:

Column	Description
First column. Indicator that the report has been enabled for integration. 	This icon indicates that reports created based on this template will be enabled for web services integration. The integration option is available only for project/shell-level and company-level reports. Note The icon is displayed only when the UDR log is in Classic view. The presence of this icon is an indicator that the report has been enabled for integration.
Name	The name of the report template
Description	The description of the report template
Data Type	The type of data on which the report is being run, for example, business processes, Cost Manager elements, project/shell information, workflow information, and so on
Access Type	Permission-Based or System
Report Type	Tabular, cross tab, summary, or alert
Owner	The creator of a report is its owner.
Creation Date	The date the report was created
Last Modified By	The person who last modified the report
Last Modified Date	The last date that the report was modified
Scheduled	The scheduled frequency of a scheduled report
Last Run Date	The last time the report was run

Creating a UDR Template

These procedures are applicable for UDR templates or for manually creating a UDR in User mode.

To create a UDR template:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select one of the following:
 - **Templates**, and then select **Reports**; or
 - **Templates**, select **Shells**, select the [shell type], and open the [shell template]. In the left Navigator, select **Reports**, and then select **User-Defined**.
3. Select **New**, and select **System Data Sources** or **Permission Based Data Sources**. The **Create a new report window** opens.
4. Fill in the fields using the information in the table below.
5. Select **OK**. The **Edit Report** window opens. This window has multiple tabs for defining the report layout and content. The actual tabs that display will depend on the type of report you are creating. These tabs are:
 - **General tab**: In this tab, you enter the report name, the title that displays on the report at runtime, and define general settings, such as enabling it for integration, and setting a default time zone to use where time stamps appear on the report.
 - **Data Elements tab**: Lets you specify the data elements on which to report, and which will appear as columns on the report at runtime. The Data Elements tab differs with each report type. In addition, the data elements that are available to be added to the report depend on the data type chosen during report creation. The data elements can include business process fields, columns in cost, funding, SOV, and schedule sheets, and project data such as project name, status, user name, and so on.
 - **Query tab**: Defines query parameters to input at report runtime.
 - **Layout tab**: Lets you customize the layout and presentation of the report. If you do not define layout parameters, a default layout will be used. The Layout tab differs with each report type.
 - **Projects/ Shells tab**: This tab appears only in company-level reports. It displays which projects/shells will be included in the report.
 - **Shells tab**: This tab appears only in shell-level reports. It displays which shells can be included in the report.
 - **Permission tab**: Enables the report owner to grant permission to other users to run or edit the report. This tab is available only in User mode and not in the report template.
 - **Schedule tab**: Lets the report owner schedule and configure automatic report generation and optionally save or email the results.
6. Complete the tabs in the Edit Report window as described in the following sections, and select **OK**.

In this field:	Do this:
Data Type	Select from the list. The Data Type list includes all available business processes (for example, base contracts), pre-defined data types (for example, project users), modules (for example, Document Manager), data views in Published status (listed in alpha order, project/shell level requires project_id in query), and may also include custom data types. Note If you are creating a permission-based template, the Data Type list includes all the permission-aware data sources that might be visible to the user, depending on the user's access permissions.
Element	If you chose a business process or a uDesigner BP-driven feature (such as funding, schedule of values, project information) as the data type, the Element drop-down list becomes available. Select one of the following options as available for your data type choice: All Fields: Makes all fields on the BP available for the report. General (Header) Fields: Only the BP header fields will be available, which provides a less detailed report. Custom Defined: This is automatically selected for uDesigner-created BPs and related functions. This enables all the custom data element fields on the BPs to be available for the report.
Report Type	Choose a report type.
Access Type	(Read-only) Depending on which option you selected, this field displays either System or Permission Based.

General Tab (All Reports)

The General tab defines the report name, title, and description and displays the data type and report type (tabular, cross tab, summary, or alert). The General tab is the same for each report type. Below is a sample of the General tab.

In this field:	Do this:
Report Name	The name appears on the user-defined reports log.
Report Title	The title appears on the report itself. By default, the field is populated automatically with the report name and is editable.
Description	Description is optional.
Data Type, Access Type, Element, Report Owner, and Report Type	Automatically populated from the options selected during the creation of the report.

In this field:	Do this:
Enable for Integration	Selecting this option flags the report as eligible for integration through web services (uLink). Contact Oracle Customer Support for more information about web services integration and uLink. This option is available for project/shell-level and company-level reports only. When the checkbox is selected, the integration icon  appears in the UDR log next to the report name. Note Because web services uses the report name to identify reports, each report marked for integration must have a unique name. If there are two reports with the same name, only one of those reports can be marked for integration. This is true even if you cannot see the other report with the same name. For example, another user has created a report with the same name, for which you do not have view permission, and marked it for integration.
Default Time Zone	This option lets you choose the default time zone that will be used where time stamps appear on the report (such as data/time data elements). There are two options: • Select the drop-down (pull-down) list, and choose a specific time zone in which to display date/time information in the report at runtime. Use this option when you want all instances of the report to display results in a fixed time zone, for example, the project location. • You can also choose to default to user's time zone. When this option is chosen, users in different locations will see report results that reflect their own time zone. Note For scheduled reports, all users will get the same report results. If the user time zone option is chosen, the report owner's time zone is used.

Data Elements Tab (Tabular Report)

Each column of a tabular report corresponds to a data element or function (formula, date, or date difference). You can add or modify the data elements or functions on this tab. The Data Elements tab differs with each report type. The data elements depend on the data type chosen during report creation (see below). The data elements can include business process fields, columns in cost, funding, SOV, and schedule sheets, project data such as project name, status, user name, and so on.

This button:	Does this:
Add Functions	Select to open the Data Element Properties window. Lets you create a formula, date difference, or date column in the report.
Add Elements	Select to open the Data Element Picker window. The data sources and elements that are available vary based on the data type that you chose when creating the report.
Modify	Modify data element properties.
Sort	Determines which column to sort report results by.
Remove	Select a listed data element, and select to remove it.
Move Up (Left)	Select a data element, and select to move the column to the left.
Move Down (Right)	Select a data element, and select to move the column to the right.
Current width	This field displays the width of the report in pixels. The report width is determined by the number and column width of data elements that are added.
Maximum available width	The maximum width of the report is determined by the page size and orientation as selected in the Layout tab.

Data Elements Tab (Cross Tab Report)

Cross tab reports allow the display of data on two axes. For example, the report below is being set up to track amount per CBS code per phase, where the CBS codes are the rows, the phases are the column headings, and the body data is made up of the line item amount.

Cross tab reports enable users to run time-series reports defined by two data sources, for example, payments made per quarter per vendor.

In this field:	Do this:
1st Column	This determines the data element that will be used for each row.
Data Element	Click Select , and choose the data element. The list will depend upon the data type chosen. The data type will be listed before the data element, separated with a slash (/). For example: Funding/Funding Type, where Funding is the data type chosen on the General tab, and Funding Type is the data element.
Heading	The heading will automatically populate with the data element that you choose, but you can edit this as necessary.

In this field:	Do this:
Width	You can specify a column width for the 1st column, or leave it blank to use the default width (automatically adjusts depending on the number of body columns in the report).
Body Columns	This determines the series for which the data will be presented. The list is pre-defined and will depend on what was chosen for the 1st Column. Typically, these are system-defined data elements related to the 1st column choice, for example, status, creation date, and so on.
Data Element	- Click Select. The Data Element Picker window opens. - Select the Data Source list at the top of the window and select a data source. This determines which data elements will be available for the report. The choices will include the data type you chose in the General tab, as well as related data sources. - Select a data element, and select OK. Some data sources might not have data elements.
Width	You may specify body column width or leave it blank to have it automatically adjusted.
Body Data	This determines the data that will show up in the body of the report.
Data Element	The list is dependent on what is chosen for the other parameters, and is determined by what is logically reportable.
Row/Column	- Select Show Total if you want column and row sum totals to be included in the report. - Choose Left or Right alignment. - Choose Ascending or Descending to determine the sorting order of the columns and rows.
Decimal Places	Select the number of decimal places to be used in the body data.
Currency Format	Select from the Project or Base currency.

Data Elements Tab (Summary Report)

On this tab, you specify the data that will be reported and how it will be presented on the project summary page. In the example below, a cost sheet report is being set up to display the value of total commits against CBS code.

In this field:	Do this:
1st Column	This determines the data element that will be used for each of the rows. In the example above, this is CBS code. Click Select , and choose the data element. The list will depend upon the data type chosen. The data type will be listed before the data element, separated with a slash (/). For example: Funding/Funding Type, where Funding is the data type chosen on the General tab, and Funding Type is the data element.
Heading	This field will automatically populate with the data element that you choose, but you can edit it as necessary.

In this field:	Do this:
Width	You may specify a column width or leave it blank to use the default width.
If the data element is a date type, you can specify time parameters	• By: Choose the year, quarter, month, or day to display the data. • Format: How the heading will display the date • From and To: Establishes the date range to include in the report.
2nd Column	This determines what information is being presented.
Record Count	Displays the total number of records. For example, for a report on a BP type, it will display the number of BP records.
Summary Value	Displays a value. In the above example, the value is the total value of the commits (Contracts + Change Orders) for each CBS code. To enter a formula, select Formula .
Summary Type	Choose one of the following: • Summary: Provides a summary value. • Average: Displays the average value. • Maximum: Displays the maximum value.
Heading	Type a heading for the 2nd column.
Width	You may specify a column width or leave it blank to use the default width.
Decimal Places	Select the number of decimal places to be used in the body data.
Currency Format	Select from the Project or Base currency.

Data Elements Tab (Alert Report)

On this tab, you define the parameters that will trigger the alert that will be sent you. In the example below, the alert will be triggered for invoices that are greater than \$1,000.

In this field:	Do this:
Alert Column	This determines what information is being presented.
Record Count	Displays the total number of records.
Summary Value	Displays a value. In the above example, the value is the total value of the commits (Contracts + Change Orders) for each CBS code. To enter a formula, select Formula .
Summary Type	Choose one of the following: • Summary: Provides a summary value. • Average: Displays the average value. • Maximum: Displays the maximum value. • Minimum: Displays the minimum value.
Condition	Specify the condition that will trigger the alert. This can be used for record count or summary value.
Trigger Value	Enter the value of the record count or summary value that will trigger the alert.

In this field:	Do this:
Indicator	Lets you specify a flag icon (red, yellow, or green) in the alert to help you identify the level or type of alert. The flags have no meaning other than user-defined identification.

Data Elements

Data Element	Description
Query parameters	This data element will allow query parameters to be printed with the report result.
Project/Shell list	This data element will allow project/shell list information to be printed with the report result.

The display of numeric data elements can be formatted. The following formats are available:

- **Decimal place:** Number of decimals to display
- **User1000 separator:** Display of comma separator
- **Negative number format:** Minus sign or parenthesis; for example, -1234 or (1234)

Query Tab (All Reports)

The Query tab defines query parameters to input at report runtime. For example, for a funding report, the query can be set to run the report only on specific company funds. You can define the funds or allow the user to specify them at runtime.

The data elements available for the query will depend on the report data type. Defining a query is optional. See [Define Report Queries \(Query Condition\)](#).

This button:	Does this:
Add	Lets you add a query condition to the report.
Add Formula	Lets you add a condition based on a formula comprised of other data elements.
Modify	Select a query condition, and select to modify.
Remove	Select a query condition, and select to delete it from the report.
Show results matching any condition (instead of all)	Select this to show report results matching one or more of the listed query conditions. If you do not select this option, the report results will include only those that match all listed query conditions.

Layout Tab (All Reports)

The Layout tab lets you configure the layout and presentation of the report results. If you do not define layout parameters, the default settings will be used. The Layout tab is the same for all reports with the following exceptions: Cross tab reports and tabular reports each include an additional layout option specific to their report types (see [Layout Tab \(Cross Tab Setting\)](#) and [Layout Tab \(Group By Setting\)](#)).

Select the Report Properties options on the left side of the window to define each layout.

Layout Tab (Page Setup Setting)

The Page Setup on the Layout tab lets you configure the size and orientation of the report (see below).

In this field:	Do this:
Report Properties	Choose Page Setup .
Size	Choose the paper size from the drop-down list (letter, legal, ledger, or A4).
Orientation	Report can be generated as portrait or landscape.

Layout Tab (Title Page, Header, Footer, Summary Page Settings)

The Title Page, Header, Footer, and Summary Page options let you define general layout and presentation of the report results. If you do not define layout parameters, the default settings will be used. Multiple standard and report-specific data elements are available to add to your report.

Note

If you want users to be able to add a runtime note, include the data element Runtime Notes in the layout.

Report Properties	Description
Title Page	You can create an optional title page, which will be the first page of the report.
Header	You may enter a header for the report. This will display at the top of each page of the body of the report. The header will not display on the title page or the summary page.
Footer	The footer will display at the bottom of each page of the body of the report. The footer will not display on the title page or the summary page.
Summary Page	The summary page will display as the last page of the report.

For more information about setting up these report properties, see [Set Up Title Page, Header, Footer, and Summary Page](#).

This button:	Does this:
Add	Select Add to add additional rows of text to the title page, header, footer, or summary page.
Modify	Select a row, and select Modify to edit it.
Remove	Select a row, and select Remove to delete it.
Move Up or Move Down	Select a row, and select Move Up or Move Down to change the order of the rows.

This button:	Does this:
Current Height	Displays the total height of the text (sum of the pixels of all lines) in the header, footer, title page, and summary page.
Maximum Available Height	Displays the maximum height available, based on the paper size and orientation.
Show Border	Select if you want the text to be enclosed in a border.

Layout Tab (Cross Tab Setting)

For cross tab reports. The fields here are applicable for time stamp data element types in the first column and body columns, as selected in the Data Elements tab).

In this field:	Do this:
By	Sets the time period for the report by year, quarter, month, or day.
Format	Select the format of the By field.
From and To	Specify the date range on which you want to report. You can select Auto Range instead.
From: Auto Range	The Auto Range feature automatically displays data in report results without specifying a date range. You can select Auto Range for either or both to and from dates. If the From Auto Range option is selected, all available data up until the specified end date will display in the report. For example, if you want to view all data up to 2005 but want to exclude 2006, you will select Auto Range From and select a To date of 2005.
To: Auto Range	If the To Auto Range option is selected, all available data from the specified start date until present will display in the report. For example, if you want to view data starting from 2004 to present, select Auto Range and select From Date of 2004.

Layout Tab (Group By Setting)

Tabular reports can include grouped data element results, for example, grouping BP record results by BP creator.

Note

For Unifier Mobile users, if the Group By option is set on reports (that is, group by user name), you cannot mark these reports as mobile. Reports marked as mobile cannot contain groupings of data results.

This button:	Does this:
Add	Select to add a group.
Modify	Select a group, and select to modify the Group By properties.

This button:	Does this:
Remove	Select the group, and select to remove.
Move Up or Move Down	Select a row, and select Move Up or Move Down to change the order of the rows.

Projects Tab (All Types)

This tab appears only in company-level reports. It displays which projects will be included in the report. The Projects tab is set up the same way for each report type.

Shells Tab (Shell-level Reports, All Types)

This tab appears only in shell-level reports, and displays which shells will be included in the report.

This button or option:	Does this:
Shells	The options in this field are: • Current Shell and sub-shells • Current Shell Only • Subshells Only • User-Defined The User-Defined option lets you choose from among the shells in which you are a member.
Exclude Inactive Shells	Lets you exclude shells with the status Inactive. This is checked by default.
Add	When you select Add , the Select shell window opens. Select the shells, and select Add . This button is available only if you have selected the User-Defined option in the Shells field.
Remove	Select a shell, and select Remove to remove it from the report. This button is available only if you have selected the User-Defined option in the Shells field.
Allow users to modify User-defined list during execution	This checkbox is enabled if User-Defined is chosen. When this checkbox is selected, users will be able to change which shells from the available list to include in the generated report at runtime.

Permission Tab (All Reports)

In the Permission tab, you can grant permission to other users to run, edit, or modify the permissions of this report. This tab is available only in User mode and not in the report template.

Schedule Tab (All Reports)

The Schedule tab enables report owners to create a schedule to automatically run user-defined reports and save the results as PDF, XML, or CVS files, automatically save the report

in the Document Manager, and to specify whether to email the report results to the report owner or to specified users and groups.

In this field:	Do this:
Enable Scheduled Report Runs	Select this checkbox to enable scheduling of automatic report runs. Define the following parameters.
Output Format	Specify the format of the scheduled report results: PDF, XML, or CSV.
Frequency	Specify the frequency with which the report will be run: Daily: Runs once at the end of the day (23:59:59). Weekly: Specify the day on which the report will be generated, for example, from previous week Saturday (00:00:00) to this week Friday (23:59:59). Monthly: Specify the date on which the report will be generated. If the scheduled date is past the last day of the month (for example, the 31), the report will automatically be generated on the last day of that month. For example, monthly (08/04/06) frequency should take last month (07/05/06 00:00:00) to this month (08/04/06 23:59:59). Quarterly: Generated at the end of each calendar quarter. For example, data generated end of Q2 should be Q2 (04/01/06 00:00:00) to end of quarter Q2 (06/30/06 23:59:59). Q1 is Jan to March, Q2 is April to June, Q3 is July to Sept, Q4 is Oct to Dec. Yearly: Report is generated at the end of the calendar year. For example, data generated end of 2006 should be 2006 01/01/06 00:00:00 to 2006 12/31/06 23:59:59.
Range of Recurrence	Choose the range of recurrence of the scheduled report: No end date: The report will be generated according to schedule indefinitely. End by: A date after which the scheduled report will not be generated.
Auto-email as attachment to report owner	Select to have a PDF, XML, or CSV copy of the report emailed to the report owner after generation. You can select this option and Auto-email as attachments to users and groups at the same time.
Auto-email as attachments to users and groups	Select to have a PDF, XML, or CSV copy of the report emailed to selected users and groups. Click Select, specify the users and groups, and select OK. You can select this option and Auto-email as attachments to report owner at the same time.  Note If a user is selected twice, as an individual user and as a member of a selected group, the user will receive only one email.
Saved Result Log	Select this checkbox to save the report, where you can view it at your convenience

In this field:	Do this:
Document Manager	Use these options to save the report in the Document Manager. In the Save as field, the system shows the name of the report; however, you can enter another name for the report if you want. In the Location field, click Select and choose the folder in the Document Manager in which the report should be saved. (You must have permissions to the folder.)

Add and Manage Data Elements (Columns) to the Report

The following procedures describe how to add data elements to a user-defined report or template. These become the columns on the report at runtime, and determine what data will be displayed on the report.

To add data elements to the report:

1. In the Edit Report window, select the **Data Elements** tab.
2. Select **Add Elements**. The Data Element Picker opens.
3. Choose one or more data elements from the list. (Press the **Ctrl** or **Shift** keys to select multiple data elements.)
4. Select **OK**.

Add formulas to data elements:

If you want to display the results of calculations based on data elements available for the data type you chose, you can create a formula column on the report.

Note

Use caution when creating a formula with data elements. It is possible to create a formula where the denominator is zero, which can cause a data conflict error when the report is run.

To add a formula:

1. In the Edit Report window, **Data Elements** tab, select **Add Functions**. The Data Element Properties window opens.
2. From the **Data Element** drop-down list, choose **Formula**. The Data Element Properties window expands.
3. Enter a column heading, which is displayed on the report.
You may specify how the column is displayed by specifying the alignment, column width, decimal places, 1000 separator, and negative number format.
4. If you select **Hide Column**, the column will not be displayed on the report.
5. Selecting **Summary** will display the sum of the column values at the end of the column.
6. Select the number of **Decimal Places** and the **Currency Format** of the data element.
7. Select **Formula** to open the **Formula Creator**.

8. Create the formula, and select **OK**.

To add a date add column:

1. In the Edit Report window, **Data Elements** tab, select **Add Functions**. The Data Element Properties window opens.
2. From the **Data Element** drop-down list, choose **Date Add**. The Data Element Properties window expands.
3. Enter a column heading, which is displayed on the report.
You may specify how the column is displayed by specifying the width (in pixels) and alignment. If you select **Hide Column**, the column will not be displayed on the report.
4. For the **Date** field, click **Select**, and choose the date data source.
5. For the **Add** field, select the numerical data source. This is the value that will be added to the date element to arrive at the final value to display in the report.
6. If you want the time to also display as well as the date, select the **Display Timestamp** checkbox.
7. Select **OK**.

To add a date difference column:

1. In the Edit Report window, **Data Elements** tab, select **Add Functions**. The Data Element Properties window opens.
2. From the **Data Element** drop-down list, choose **Date Difference**. The Data Element Properties window expands.
3. Enter a column heading, which is displayed on the report.
You may specify how the column is displayed by specifying the width (in pixels) and alignment. If you select **Hide Column**, the column will not be displayed on the report.
4. Specify the earlier date and later date. Choose **Today** if you want to use the current day as one of the dates, or click **Select** to open the Data Element Picker. Select a data source from the drop-down list, and then select a data element from the resulting list.
5. If you want to show results with partial days, select the **Show Partial Days** checkbox.

Note

Date Picker data elements (as opposed to Date Only pickers) include timestamps. When calculating the difference between these date and times, it is possible to get a result in partial days. If you select this checkbox, results will display two decimal places; if you do not select this checkbox, results will be in whole numbers.

6. Select **OK**. The calculation is Later Date - Earlier Date, in days.

Manage Report Column (Data Element) Properties

You can refine the display of the report columns by modifying the data element properties. You can modify the column heading, width and alignment, as well as hide a column, or choose to display the timestamp for date pickers.

To view or modify column properties:

1. In the Edit Report window, **Data Elements** tab, select the listed data element, and select **Modify**.

2. You can modify the column heading, column width, and alignment for how you want it to appear in the report results.
3. Select **OK**.

To hide data elements in the report output:

1. Select the listed data element, and select **Modify**.
2. Select **Hide Column** if you do not want the column to appear on the report (for example, columns added as part of a formula calculation but do not need to be printed).
3. Select **OK**.

To display the timestamp on date data elements:

1. Select the listed date picker data element and select **Modify**.
For date picker elements that include timestamps, the Data Element Properties window displays an additional option: Display Timestamp. This option is not available for data elements based on date-only pickers, or other elements that do not capture timestamps.

 Note

The Schedule Manager ignores timestamps, therefore, date fields associated with the Schedule Manager will not display the time, even if this option is selected.

2. Select **Display Timestamp**. At runtime, the time displays next to the date.
3. Select **OK**.

To remove a listed data element:

Select the data element to remove from the report, and select **Remove**.

To change the order of the data element columns:

Select a data element from the list. Select **Move Up (Left)** to move the element up the list to the left on the report), or **Move Down (Right)** to move it down to the right on the report.

To choose the column by which to sort the report:

1. Select **Sort**.
2. In the **Column Heading** list box, select the data element column by which you want to sort the report findings. For example, choose Creator Name to sort by the creator of each record.
3. Select the right arrow **>>** to move it to the Sort By field.
4. In the Sort Order list, choose **Ascending** or **Descending**.
5. Select **OK**.

Set Auto Range

The auto range feature for cross tab report types automatically displays report data without having to specify a date range. During set up, you select the data types. Only time stamp types enable the option for configuring the date range and auto range.

For example, if 2005 to 2006 is specified as the date range but only values for 2005 have been entered, the report will only display data for 2005. If a date range is not specified, all data will be displayed in the generated report.

At runtime, users will have the option to select dates or auto range.

To enable the auto range option:

1. From the Edit Report window, select the **Data Elements** tab.
2. Set time stamp data element (date) under First Column or Body Columns.
If no timestamp data element is specified, all dates with data will be displayed when the report is generated.
3. Select **Apply**.

To set the auto range:

1. Select the **Layout** tab, and then select **Cross Tab**. There are two checkboxes for auto range.

Note

Only report columns with data appear for non-time-stamp data types. If a data value is not entered, the column will not appear in a cross tab report. If you select the time stamp data type, report columns appear, even if data is not entered.

2. For From Date, select **Auto Range**.
The date selection option will be grayed out. If From Date is selected and To Date is deselected, all data up until the specified end date will display in the report. For example, to view data up to 2005 but exclude 2006, select Auto Range and enter a To Date of 2005.

Alternatively, to view data from 2004 to present, deselect Auto Range and enter a From Date of 2004.
3. For To Date, select **Auto Range**.
The date selection option will be grayed out. If From Date is deselected, data entered from the specified start date until present will display in the report. For example, to view data starting from 2004 to the present, select Auto Range and enter a From Date of 2004.

Alternatively, to view data up to 2005 but exclude 2006, deselect Auto Range and enter a To Date of 2005.

If you select both options for the Auto Range From and To dates, only the data supplied for this period will appear in the report.

Grant Report Edit or Run Permissions to Other Users

If you are the creator or owner of a report, or if you are an administrator with full access permissions, you can grant permission to other users to access or run a report.

To grant report permission to other users:

1. In **User** mode, navigate to the user-defined report log.
2. Select the UDR, and select **Edit**. The Edit Report window opens.
3. Select the **Permission** tab.
4. Select **Add**. The User/Group Picker opens.
5. Select users or groups, select **Add** and **OK**.
6. Select the newly added user or group, and select the permissions to grant:

- **Modify Permission:** Allows the user to modify other users' permission settings for the report.
 - **Edit Report:** Allows user to edit report parameters.
 - **Run:** Enabled by default. Allows the user to run the report.
7. Select **Apply** to save your changes and then **OK** to exit the Edit Report window.

Define Report Queries (Query Condition)

You can define query parameters that users can input at report runtime. For example, for a funding report, the query can be set to run the report only on specific company funds that the user specifies at runtime. Defining a query is optional.

The data elements available for the query will depend on the report data type, and the condition options will be dependent upon the data element type chosen.

To define a query:

1. From the **Query** tab, select **Add**.
2. In the **Query Condition** window, click **Select**.
3. In the Data Element Picker, choose a data source, such as a query-based tab, from the drop-down list, and then choose a data element from the list.

Note

If you choose a date-type data element, the **Use timestamp in query** checkbox becomes available; if you select this option, the timestamp as well as the date will be considered in the query.

4. The **Label** field is populated based on the selection and can be modified.
5. Select a condition from the resulting list.
For example, choose **equals** to generate reports that exactly meet certain conditions or **between** to generate a report when the value of the data element is between the two specified values in the query condition.
6. For **Values**, click **Select**, and select one or more values for the condition. For example, select **Pending** or **Approved**.
For maximum flexibility, choose a list of conditions but leave the value empty. This allows the user who runs the report to choose to use one or all of the queries to limit the data on which the report will be based.
7. If you want users to be able to modify these values when running the report, select **Allow users to modify value(s) during execution**. This option is checked by default and recommended to provide flexibility at report runtime.
8. Select **OK**.

Set Up Title Page, Header, Footer, and Summary Page

You can set up the report's title page, header, footer, and summary page from the Layout tab. These are all set up in a similar way.

- The title page is printed as the first page of the report.

- The header is printed at the top of each of the results pages.
- The footer is printed at the bottom of each of the results pages.
- The summary page is printed at the end of the report, after the results.

To set up the title page, header, footer, and summary page:

1. In the **Edit Report** window, select the **Layout** tab.
2. Under Report Properties, select **Title Page**, **Header**, **Footer**, or **Summary Page**.
3. Select **Add**.
4. Select **Content**, and select from the list. The drop-down options are the same for left, center, or right columns.
 - **Number of Projects/shells**: Displays the number of projects/shells within the phrase "This report contains data from *n* projects or shells."
 - **Page**: Shows the page number for each page of the report.
 - **Shell List**: Provides a list of all the projects/shells from which data is used for the report, in the format *Project/Shell Number: Project/Shell Name*. Can be used for reports on one or multiple projects/shells.
 - **Shell Name**: Displays the project/shell name when the report is for a single report. If multiple projects/shells are included in the report, the names will not be displayed (use Project/Shell List instead).
 - **Shell Number**: Displays the project/shell number when the report is for a single report. If multiple projects/shells are included in the report, the numbers will not be displayed (use Project/Shell List instead).
 - **Query Parameters**: Displays the query parameters entered from the report.
 - **Report Owner**: Displays the report owner.
 - **Report Run By**: Displays the user who ran the report. If the report was generated by schedule, the name of the report owner will be displayed.
 - **Report Title**: Displays the title of the report.
 - **Run Date**: Displays the date on which the report was run. This date/time reflects server time, that is, the time zone in which the server running your Unifier environment is located; for most users, this will be Pacific Time (GMT -8). If you have any questions regarding server time for your environment, contact your Company Administrator.
 - **Run Date and Time**: Displays the date and time on which the report was run. This date/time reflects server time.
 - **Time Zone**: Displays the time zone that is applicable for the report, as chosen in the General tab of the Edit Report window (a default time zone or the user's at runtime).
 - **Runtime Note** Choosing this option does two things: provides a text box in which to enter notes that will appear on each report (for example, "Runtime Note"), and activates a Runtime Notes text box in the Notes tab during runtime in which the user running the report can add notes that will appear on the current report only.
 - **Text**: Provides a text box in which you may enter text to be displayed on the report.
5. Use the Vertical Alignment, Font Size, and text style fields to edit the content.
6. Keep an eye on the fields in the bottom of the window:
 - **Current height (pixels)**: Displays the total height of the text (sum of the pixels of all lines) in the header, footer, title page, or summary page.

- **Maximum available height:** Total allowable height.
- **Show Border:** Selecting this checkbox will display a four-sided border around the title page, header, footer, or summary page text.

Schedule Report Runs

Report owners can schedule automatic generation of user-defined reports. The report can be scheduled to run daily, weekly, monthly, quarterly, or yearly. Schedule report results will be saved and can be retrieved later, or can be optionally emailed.

Users with run permissions will be able to retrieve the generated reports. Report owners can schedule generation of the report.

To schedule report runs:

1. Open the Edit Report window for the report and choose the **Schedule** tab.
2. Select the **Enable Scheduled Report Runs** checkbox.
3. Select the output format:
 - **PDF:** The results will be saved in a PDF file, which can be read using Adobe Acrobat Reader.
 - **XML:** The results will be saved in an XML file.
 - **CSV:** The results will be saved in a CSV file, which can be read using Microsoft Excel or another application that uses CSV.
4. Specify the frequency with which the report will be run:
 - **Daily:** Report will be run daily.
 - **Weekly:** Specify the day on which the report will be generated.
 - **Monthly:** Specify the date on which the report will be generated. If the scheduled date is past the last day of the month (for example, the 31st), the report will automatically be generated on the last day of that month.
 - **Quarterly:** Generated at the end of each calendar quarter.
 - **Yearly:** Report is generated at the end of the calendar year.
5. Specify the range of recurrence of the scheduled report:
 - **No end date:** The report will be generated according to schedule indefinitely.
 - **End by:** A date after which the scheduled report will not be generated.
6. Select **Auto-email as attachment to report owner** to have a copy of the report emailed as a PDF, XML, or CSV file attachment, based on your output format selection. Or select **Auto-email as attachment to users and groups** to have a copy of the report emailed as a PDF, XML, or CSV file attachment, based on your output format selection. Click **Select**, specify the users and groups, and select **OK**. You can select this option and **Auto-email as attachments to report owner** at the same time.

Note

Be sure to specify **Results from scheduled reports** in your user preferences email management to receive the email and attachment.

7. Select the **Saved Result Log** checkbox to save the report in the system, where you can view it at your convenience.
8. Select the **Document Manager** checkbox to save the report in the Document Manager. In the **Save as** field, the system shows the name of the report; however, you can enter another name for the report if you want.

In the **Location** field, click **Select** and choose the folder in the Document Manager in which the report should be saved. (You must have permissions to the folder.)

9. Select **OK**.

Report Run Times

Run time reflects server time, that is, the time zone in which the server running your Unifier environment is located; for most users, this will be Pacific Time (GMT -8). If you have any questions regarding server time for your environment, contact your Company Administrator.

- **Daily:** 23:59:59
- **Weekly:** For example, from previous week Saturday (00:00:00) to this week Friday (23:59:59).
- **Monthly:** For example, monthly (08/04/07) frequency should take last month (07/05/07 00:00:00) to this month (08/04/07 23:59:59)
- **Quarterly:** For example, data generated end of Q2 should be Q2 (04/01/07 00:00:00) to end of quarter Q2 (06/30/07 23:59:59).
- Q1 is Jan to March, Q2 is April to June, Q3 is July to Sept, Q4 is Oct to Dec.
- **Yearly:** For example, data generated end of 2007 should be 2007 01/01/07 00:00:00 to 2007 12/31/07 23:59:59.

Enable a Report for Web Services Integration

You can flag project/shell and company user-defined reports as eligible for integration. This enables report results to be available for integration with other systems through web services and uLink. Contact Oracle Customer Support for information regarding XML integration via web services.

To enable a user-defined report for web services integration:

1. Open the Edit Report window and choose the **General** tab.
2. Select the **Enable for Integration** checkbox, and select **OK**. The integration icon  will display in the UDR log next to the report.

Access Control Permissions for UDRs

You can assign **User-Defined** permissions in the permissions-related **Access Control** module:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **User Mode Access**, expand **Projects/Shells**, and then expand **Reports**.

Project/Shell and Company Level

Use the **Create Permission Based** permission to define whether the User-Defined Report (UDR) being created will have data sources that are permission-aware. The permission-aware data sources are defined as data sources that only return data that the user has permissions to see by way of the user-interface (UI). This is based on records returned. That is, the user will be able to see the data that is in hidden blocks or hidden tabs. The following data sources are available to create permission-aware UDRs:

- Business Process (BP)
- Document Manager

By default, **Create Permission Based** will be selected when user selects the **Create** permission for the user-defined reports.

Permission Level	Description
The following permissions are selected: • Create All • Create Permission Based	The user will be able to create report for all data sources as well as permission-aware BP data sources.
The following permissions are selected with Full Access attribute. • Create All • Create Permission Based	The user will be able to create report for all data sources as well as permission-aware BP data sources.
The Create Permission Based permission is selected.	The user will only be able to create report for permission-aware BP data sources.
The Full Access attribute is selected.	The user will be able to create report for all data sources as well as permission-aware BP data sources.
The Access All Projects attribute is selected.	The user will be able to create report in all projects. User can create company-level UDRs even for projects that they do not have access to.

Note

The user will not be able to clear the **Create Permission Based** permission and only select the **Create All** permission.

You can assign **User-Defined** permissions in the following permissions-related modules, and the **Create Permission Based** permission is available in these modules:

Note

Templates (for both Company-level and Project/Shell-level UDRs) will only be able to create system data sources templates.

- **User Administration**

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. In the right pane, expand **Administration Mode Access**, and then expand **User Administration**.
4. Assign through **Company Users**, **Partner Users**, or **Groups** sub-nodes.

- **Standards & Libraries**
 1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
 2. In the left Navigator, select **User Administration**, and then select **Access Control**.
 3. In the right pane, expand **Administration Mode Access**, expand **Standards & Libraries**, and then select **Permission Templates**.

Access Control Changes after Upgrade (Migration)

In both Project/Shell Access Control and Company-level Access control:

- If the previous **Create** permission was selected, then after upgrade (migration) both checkboxes (**Create All** and **Create Permission Based**) will be selected.
- If the **Full Access** permission is selected (all three checkboxes) after upgrade (migration), then the **Full Access**, **Create All**, and **Create Permission Based** will be selected, after upgrade (migration).

Creating User-Defined Project, Shell, and Company Reports

Before running a report, it must first be created and set up to define its parameters. The following procedures describe creating UDRs at the project/shell and company levels. This section will show you how to:

- Access project, shell, and company UDRs
- Create a UDR by copying a template
- Create a UDR by copying an existing report in the same log
- Create a UDR from scratch

Company Workspace Admin Mode UDR

The following describes the **User-Defined Reports** log elements for the **Company Workspace** tab (**Admin** mode).

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, and then select **Reports**. The **User-Defined Reports - Current View: All** log opens.

User-Defined Reports log menu options:

Menu	Options
File	Enables you to perform the following actions: • New • Copy - Template • Open
Edit	Enables you to edit or Delete a report.

Menu	Options
View	Enables you to perform the following actions: • All • Find • Saved Results • Audit Log
Help	Enables you to access: • Unifier Help • Admin Help • uDesigner Help • Unifier Library • User Productivity Kit

User-Defined Reports log toolbar options:

Toolbar Option	Description
New	Enables you open the Create a new report (Create User-defined Report) window and set up the following fields: • Data Type • Element • Report Type • Access Type
Copy	Enables you to copy a Template .
Open	Enables you to open a record.
Edit	Enables you to edit a report.
Delete	Enables you to delete a report.
Find	Enables you to find a report on the log.

User-Defined Reports log columns:

The columns provide the following details about each UDR.

- **Enabled for Integration**
- **Name**
- **Description**
- **Data Type**
- **Access Type**
- **Report Type**
- **Owner**
- **Creation Date**
- **Last Modified By**
- **Last Modified Date**
- **Scheduled**

Create a UDR from a report template

The following procedure explains how to create a UDR by copying an existing report template.

To create a user-defined report from a template:

1. Navigate to the project/shell or company User-Defined Reports log.
2. Select **Copy**, and choose **Template**. The Copy From Report Template window opens.
3. Select a template from the list, and select **Copy**. The Edit Report window opens.
4. Review the parameters on each of the tabs and edit as necessary. See [Creating a UDR Template](#) for details on the tabs.
5. Select **Apply** to save changes or **OK** to save changes and close the Edit Report window. The report is listed in the log.

To create a user-defined report from an existing report:

1. Navigate to the project/shell or company User-Defined Reports log.
2. Select a report from the log.
3. Select **Copy**, and choose **Report**. The Edit Report window opens. The default name is "Copy of *Template Name*."
4. Follow the steps in [Creating a UDR Template](#).

To create a user-defined report manually:

1. Navigate to the project/shell or company User-Defined Reports log, and select **New**.
2. Follow the instructions in [Creating a UDR Template](#).

Accessing User-Defined Reports (UDRs)

User-defined reports (UDRs) are set up and run in **User** mode. You can run UDRs at the:

- Project level
- Shell level
- Company level

When you run a report based on a permission-aware Document Manager data source, the system lets you see the report only if you have permission to see the data source, in case of:

- Document Manager - Company
- Document Manager - Project/Shell

For Collaborator Users, access to creating and viewing UDRs is also determined by permissions. If the **Create Permission Based** setting is enabled for your account, you can create and view UDRs and transfer ownership. If only the **View** setting is enabled, you can view existing UDRs and transfer ownership.

In **User** mode, UDRs reside in the **User-Defined Reports Log**. For more information, see User-Defined Reports Log.

To access UDRs from this log:

1. Go to the applicable tab, and switch to **User** mode.
2. In the left Navigator, select **Reports**, and then select **User-Defined**.

Editing or Deleting User-Defined Reports

You can edit most report parameters and assign report permissions to each report in User mode. You can also select the projects/shells to include in company-level reports.

This is applicable if you are the report owner, if you have edit permission, or if you are an administrator with full access permissions.

To edit a user-defined report:

1. Navigate to the UDR log and select the report to edit.
2. Select **Edit**. The Edit Report window opens. Review or edit the parameters on the tabs. For more information about each of the tabs, see [Creating a UDR Template](#).
3. Select **Apply** to save changes or **OK** to save changes and close the Edit Report window.

To delete a user-defined report:

Select a report from the log, and select **Delete**.

Importing User-Defined Reports into Project or Shell Templates

You can import user-defined reports into project templates from project templates in other Companies or other Unifier environments. Also, you can import user-defined reports into shell templates of the same shell type from other Companies or other Unifier environments. This lets you reuse reports created in other companies or environments.

To import user-defined reports:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Templates**, select **Reports**, and then select **User-Defined Reports**.
3. In the **User-Defined Reports** log, from the toolbar, select **Import** to open the **Unifier Login** window.
4. Enter the following information:
 - **Company Short Name**: This is the identifier used for your company, and was set up at the time of company configuration.
 - **Authentication Key**: This key is set up at the time the company was configured. Contact your Site Administrator for further information.
 - **Unifier URL**: The web address of the Unifier server.
 - **Search For**: Use to narrow your search for the report you want to import.
5. Select **OK**. The **Import Report Template from Unifier** window opens, listing the user-defined reports.
6. Choose the report or reports, and select **Import**.
In case of errors, the **UDR Import Error** window opens, listing any import errors. These are some possible report import errors:
 - Source and destination report environments have different versions of Unifier
 - Report exists in the destination if the report is enabled for Integration
 - Report data sources vary between the report source and destination

If there are no errors, all reports are imported; if there are errors, none of the reports are imported until the errors are rectified.

Note

If you are importing a user-defined report into a shell template, the report you import must be from a shell of the same type as the destination shell template.

7. When the import is complete, select **OK**.
8. Select **Close** to exit the **Import Report Template from Unifier** window. The reports are added to the **User-Defined Reports** log.
When you import a user-defined report, you are listed as the report owner. For more information about the **User-Defined Reports** log, see [Accessing User-Defined Reports \(UDRs\)](#).

Configuration Package Management

You can manage the Configuration Package creation and import through the **Configuration Package Management** grouping node in the left Navigator.

The **Configuration Package Management** grouping node lets you:

- Review the existing items in the Component Lists.
- Create a Component List.
- Review the add-on Component Lists.
- Create an add-on Component List.
- Review the existing Configuration Packages.
- Create a Configuration Package.
- Import a Configuration Package.
- Review the add-on Configuration Packages, if permitted.

You can also view changes that have been, or might be, made as part of importing or exporting a Configuration Package. For example, you can compare BP designs included in the Configuration Package to the most recent versions deployed in the environment. For more information, see [Comparing Configuration Packages and Viewing Design References](#).

The following topics provide more information about the **Configuration Package Management** grouping node and its functional nodes.

Accessing Configuration Package Management Node

Access to the **Configuration Package Management** grouping node is controlled by permissions.

To grant permissions to the Configuration Package Management grouping node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **User Administration**, and then select **Access Control**.
3. On the right pane, expand **Administration Mode Access**, and then select **Configuration Package Management**.
4. Use the **Module Permission Settings** window to add, modify, or remove users and groups.

When you select **Add** to add a user, the **Permission/Access Control** window opens. In this window (under **Permission Settings** field), you can grant permissions to both users and groups by selecting **Enable**.

Note

Users can view the contents of this node.

Additional Information About Permissions in Configuration Package

By design, the system adds permission to the default group, in the destination module or source. To avoid conflict, ensure that you remove the default group.

To access the Configuration Package Management node:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**.
The **Configuration Package Management** grouping node has the following functional nodes:
 - **Component Lists**: A central repository that contains all the component lists designed in a given environment.
 - **Add-on Component Lists**: To create add-on component list for use with a configuration package that can be imported in to a different development environment.

Note

The **Add-on Component Lists** functional node, when included with the **Component Lists** functional node, is only available in the development servers.

The **Add-on Component Lists** functional node is available for the users who have "enable" permission for the **Configuration Package Management** grouping node.

- **Configuration Packages**: The configuration packages in form of zip files that exist in the given environment. The packages displayed in the log are the packages that you have created in, or imported from, the given environment.
- **Add-on Configuration Packages**: To create add-on configuration packages that can be imported in to a different development environment.

Note

The **Add-on Configuration Packages** functional node, along with the **Component Lists** functional node, is only available in the development servers.

The **Add-on Configuration Packages** functional node is available for the users who have "enable" permission for the **Configuration Package Management** module.

Component Lists

The **Component Lists** functional node is a central repository that contains all the component lists existing in an environment.

Note

If you created a Component List that is not currently listed, right-click the **Component Lists** functional node, and select **Reload**.

The **Component Lists** log displays all the created component lists and provides the following details in column format:

The **Component Lists** node provides the following toolbar options:

Create: Select **Create** to open the **New Component List** window. This window is divided into two panes. The left pane lists all the modules that you can select to include their components in your new component list, and the right pane lists the corresponding components to select. So, if you select the **Data Cube Definitions** from the left pane, the right pane displays the names of the components, the descriptions of the components, and the option to replace the component in the destination.

Name: This is a required field that lets you to enter the name for the new component list.

Error Check: This option lets you verify whether there are any errors or warnings related to the component list.

Cancel: This option lets you cancel creation of the new list.

Save: This option lets you save the new list.

Save As: This option lets you save a created component list as a different list.

Find on Page

After you create a new component list, the system places the newly created component list in the **Component Lists** log. You can use the *gear menu* () next to the new component list, to conduct the following operations:

- **Open**
- **Delete:** The user can delete the component list; however, if the component list is a part of any **Draft** status configuration package, the user will not be able to delete the component list, and the user will see the following alert message: "The component list is used in a Draft Configuration Package and cannot be deleted."
- **Print**
- **Download last checked error/warning report**
- **List Name:** The name assigned to the component list by the user at the time of creation. The component list name will be unique. If the user tries to create a duplicate list the system displays an alert message. For more information, see [Creating Component List](#).
- **Last Error Check Status:** The status for component list is determined by the **Error Check** action. There are three different statuses for the component list:
 - **Pending:** This status will be seen for the list which has not been error checked by the user.
 - **Complete:** This status will be seen when the user has performed the error check and there are no errors existing for the component list.
 - **Error:** This status will be seen when the user performed error check and there are errors which need to be resolved for the component list.

- **Creation Date:** The date that the component list was created. This will retain the user's date preferences.
- **Last Error Check:** The date that the error check was performed. This will retain the user's date preferences. If the list is in **Pending** status then the **Last Error Check** column will show empty for the corresponding list.
- **Last Modified Date:** The date the component list was last modified on.

The **Component Lists** log is *sorted* by default on the **Creation Date** column. All other columns can be sorted as desired.

Component List Associated with your Configuration Package

To prevent errors, you do not need to create the component list manually to create a configuration package replicating the one in the Development environment.

You can:

- Create a new configuration package based on the component list that you have imported into the destination environment.
- Replace the existing component list when you create the component list through the configuration package.
- Edit the new component lists created through configuration package import, after it is completed

The preceding operations apply to both unpublished and published configuration packages.

Replace in Destination Column (Import and Export)

You can select which components will replace or override existing components, when you have created a configuration package for export.

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Component Lists**.
3. In the **Component List** log, double-click the component that you want to open. The **Edit Component List** log opens. The **Edit Component List** log has two panes. The left pane is the components navigation pane, and the right pane is the components log pane, corresponding to the component select from the navigation pane.

In the **Edit Component List** log, from the components navigation pane, when you select any component, the corresponding component log includes the **Replace in Destination** column (the last column).

When you select a component, you select the corresponding checkbox in the Replace in Destination column to indicate whether your selected component can replace the existing component in the destination.

In case of Business Processes (from the components navigation pane select Setup, under the Company Workspace), you can do the same and indicate whether your selected BP can replace the existing BP in the destination by way of selecting the corresponding checkbox in the Replace in Destination column.

Note

For a single-record BP, whether you select the option **Replace in Destination**, or whether you do not select the option **Replace in Destination**, the system will replace the destination BP.

When importing the configuration package, the components that have the additional **Replace in Destination** checkbox deselected will not override the existing component values with the contents from the package. The **After Import Status** value for those components will be **No Change**.

If the component exists in the destination, it will get overridden, based on selecting **Replace in Destination** for that component in the package. If the component does not exist in the destination, it will be added by default.

Example

If a string drop-down (pulldown) DD such as **Assigned Department** which has been used in user attributes is modified in the destination server, and if the configuration package has same string drop-down (pulldown) DD (**Assigned Department**), where the **Override** option is not selected, then it will be ignored while importing the configuration package and in the destination server the **Assigned Department** values remains the same after the configuration package import.

Note

Currently, all the associated groups for the tagged components will be part of the configuration package (for some components users will also be tagged), and when the configuration package is imported, even though the components do not get updated because the **Replace in Destination** is set to **No Change**, the associated groups and users will be added into the destination.

Add-on Component Lists

The **Add-on Components Lists** sub-node lists all the added component lists existing in the development environment and has the following toolbar options:

Note

- The Add-on Component Lists and the Add-on Configuration Packages follow the same naming convention as regular Component Lists and Configuration Packages, for package names.
- The file names for Add-on and Component Lists cannot contain these characters: forward slash (/), backslash (\), colon (:), asterisk (*), angle brackets (< >), and vertical bar, or the pipe (|), quotation marks (" "), and question marks (?). You can use close bracket (]), open and close braces, or curly brackets ({ }), apostrophe or single quote ('), and semicolon (;).
- The file names for Add-on and Configuration Packages (Package Name in Create and Import) cannot contain these characters: forward slash (/), backslash (\), colon (:), asterisk (*), angle brackets (< >), and vertical bar, or the pipe (|), quotation marks (" "), and question marks (?). You can use close bracket (]), open and close braces, or curly brackets ({ }), apostrophe or single quote ('), and semicolon (;).

Create

Select to create an add-on component list. When you select **Create**, the **Shell Templates** window opens.

From the **Shell Templates** window, you must select a shell template.

Note

- Ensure that the components (from the selected shell template) do not contain dependencies on any shell attributes.
- You must use unique names when you create multiple add-on component lists.

The user can create a configuration package by using the add-on component list, based on a selected shell template.

The **Shell Templates** window lists all the available shell templates defined in the server. The shell templates are grouped by the shell type, in the **Type** drop-down list, regardless of the status of the shell template.

The **Shell Templates** window has the following toolbar options:

- **Type**: Enables you to select one of the shell types of multiple instance shells.
- **Search**: Enables you to filter the displayed list, based on the search parameters defined in uDesigner.
- **Find on Page**: To search for a particular item.

You can only select one shell template. After you select a shell template from the **Shell Templates** window, you can click **Select** to open the **New Add-on Component List** window.

Depending on the shell template that you select, the **New Add-on Component List** window groups the types of components available to export on the left Navigator, as grouping nodes. The following lists some of such components:

- Designs such as the Classic Payment Applications business process with AI features enabled (cloud only)
- Data Definitions
- Data Elements
- Data Structure Setup
- Configuration
- Visualizations
 - Data Sources
 - Content
- Integrations
 - Oracle Integration Cloud
- Designs, Log Views, Customize Email Subject, Custom Templates
- Company Workspace: Setup
- "Shell Template Name:Shell Template Number"

Note

The Designs component will not show the Shell Manager grouping node in add-on packages because you cannot include shell designs in the component list.

If the selected "Shell Template Name:Shell Template Number" is displayed in the grouping node, the components that are available for the shell template are as follows:

Note

This list is based on the selected shell template.

- Access Control
- Setup: Select Oracle Integrations configured for Activity sheets in Activity sheet setup.
- Folder Structures
- Sheets
- Rules
- User Defined Reports
- Dashboards

All the components available to be selected or tagged will be displayed similar to a regular component list. For example, when you select "Setup," all the components (such as the Business Processes, Dashboards, Gates, Configurable Managers, and so forth) that can be tagged will be displayed.

When you create an add-on component list, you can perform the following additional actions, similar to the component lists:

- **Error Check:** To open the **Add-on Component Analysis** window (read below) which displays the list of errors or warnings related to the components selected.

- **Save:** To save add-on component list, with a user-specified list name. The list name will be shown in the log.
- **Save As:** To save a component list with a new name. This allows you to work edit a component list. When you create an add-on component list and select **Save** or **Save As**, a unique name validation will take place.
- **Cancel:** To discard your changes and close the window.

Find on Page

To search for a particular item (a component list) in the **Add-on Component Lists** log.

The **Add-on Component Analysis** window is displayed when you tag the components in the add-on component list and perform an error check.

This window displays all the dependency errors along with the miscellaneous errors or warnings. When you tag a shell template components and run an error check, you will see an error if the tagged shell template component has a dependency on the shell attribute design of the selected shell template.

For example, if the BP setup component of the shell template is tagged, and the BP design has data elements (such as shell picker, shell data picker, linked elements, or any data element) that have a dependency on the shell attribute design of the selected shell template, then the **Add-on Component Analysis** window displays an error which explains why the BP setup component cannot be included in the component list.

At this stage, you will be able to fix the shell attribute design dependency errors either by deselecting the components that have a dependency on the shell attribute design of the selected shell template, or by saving it as a draft and making the necessary design changes accordingly and proceed to include component back in the add-on component list. This rule applies to all tagged shell template components such as BP Setups, Dashboard Setups, User Defined Reports, and so forth.

Note

The published designs will not be included in this add-on component list for the selected components.

When you finish, you can cancel the changes or apply the changes that you have made.

The **Add-on Components Lists** sub-node has the following columns:

Column	Description
List Name	The name assigned to the add-on component list, by the user, during creation. This is a required field in the add-on component list window. The List Name column will display the name of the component lists that have been created. The error check status will display the status of the component list, whether it is complete or in draft, similar to the regular component lists.
Source Shell Template	This column will populate with the value "Shell Template Name:Shell Template Number" that the user has selected for the component list.

Column	Description
Shell Type	This column will display the shell type value based on the selected shell template. The tagged components might have dependency on Cost Manager of that shell type.  Note The Shell Type field will be populated as either CBS Cost Codes or Generic Cost Codes, regardless of the components that are tagged with in the shell template. The Shell Type field will be populated based on the shell template that the user has selected. One of the following values will be displayed based on the shell template selected. Selected shell template can be of the two types: • Generic Cost Codes • CBS Cost Codes
Last Error Check Status	The status will be displayed based on the error check. The values can be one of the following: • Pending • Complete • Error
Creation Date	The date the add-on component list was created. The date form is according to the user preferences.
Last Error Check	The date the last error check was performed. The value will be empty if no error check was done for the add-on component list. The user can save the add-on component lists with errors. The user can also save the add-on component lists without doing an error check. The date component list is validated for any errors will be displayed in the Last Error Check column.
Last Modified Date	The date the add-on component list was last modified.

The *gear menu* () options for each item in the **Add-on Component Lists** log:

Option	Description
Open	To edit the component lists that have been created. When you select Open, the Edit Add-Component List window opens. From the upper-right corner, use the Selected Components in the List menu (Numbered list icon) to open the Selected Components window and view, see the total number of, or update the selected components. The function is similar to the function of the Selected Components suboption in the View option. However, this menu option enables you to select or deselect an item from the list, and select Update to update the list of selected or not selected components. You can use the Print menu () to print the items on the Edit Add-Component List window log. Use the Name field to change the name of the component. Use the Error Check option to run an error check for the items displayed on the log. Use Save to save any changes that you have made on an item. Use Save As to save an item with a different name. The Expand-Collapse option (plus or minus icon) enables you to expand or collapse the items on the log. The View option enables you to set the log view through the following options: • All Components: To see all the components, in the window. • Selected Components: To see only the selected components, in the window. • Not Selected Components: To see only the components that have not been selected, in the window. The Actions menu allows you to select and deselect components from the list in bulk. Use the Find on Page to search for a specific item on the log.
Delete	To delete the list name <i>if it is not used</i> in a draft of the Add-on Configuration Package .
Print	To print the package contents.
Download last checked error/warning report	To download the last error or warning report.

Configuration Packages

The Configuration Packages page contains the Create, Import, and Find on Page options.

The Configuration Packages log displays multiple columns, such as Package Name, File Name, Description, Status, and so on. By default, the log is sorted based on the Creation Date column.

The configuration package name (Package Name) is unique and cannot be duplicated.

The options available under the *gear menu* () are:

- **Open**
- **Download** (Only for status Created, Import Success)
- **Download impact analysis report** (Only for Import Success, Import Failed, or Import Error)
- **Delete**
- **Download error/warning report**
In addition to the regular errors and warnings, you can download the error report to see limited information about the exception context.

Review the following topics for more information about:

- [Creating Configuration Packages](#)
- [Importing Configuration Packages](#)
- [Viewing Configuration Packages](#)

 Note

Pre-17.6 configuration package zip files will not be available in the log. If you want to view your pre-17.6 log content, Oracle recommends that you print your pre-17.6 log content prior to upgrading.

Add-on Component Lists and Add-on Configuration Packages

Similar to the component lists and configuration package creation, when a user selects the shell template components to create an add-on component list, if the selected components have references to the custom user attributes, and the user attribute design is not included, the system displays messages regarding the inclusion of the custom user attributes (including pickers) when you are creating an add-on component list and add-on configuration packages.

 Note

If the custom user attributes are shell data pickers, when you select export, the system displays error messages while creating add-on component list or add-on configuration package because shell data pickers are dependent on the shell attribute design.

Example

The business process workflow setup filtering conditions has a shell picker as user attribute 'Site Picker 1' in the filtering condition.

Add-on Configuration Packages

The **Add-on Configuration Packages** sub-node is available for the users who have "enable" permission for the **Configuration Package Management** module. This sub-node lists all the added configuration packages existing in the development environment and has the following toolbar options:

Note

- The Add-on Component Lists and the Add-on Configuration Packages follow the same naming convention as regular Component Lists and Configuration Packages, for package names.
- The file names for Add-on and Component Lists cannot contain these characters: forward slash (/), backslash (\), colon (:), asterisk (*), angle brackets (< >), and vertical bar, or the pipe (|), quotation marks (" "), and question marks (?). You can use close bracket (]), open and close braces, or curly brackets ({ }), apostrophe or single quote ('), and semicolon (;).
- The file names for Add-on and Configuration Packages (Package Name in Create and Import) cannot contain these characters: forward slash (/), backslash (\), colon (:), asterisk (*), angle brackets (< >), and vertical bar, or the pipe (|), quotation marks (" "), and question marks (?). You can use close bracket (]), open and close braces, or curly brackets ({ }), apostrophe or single quote ('), and semicolon (;).

Create:

To open the **New Add-on Configuration Package** window and create add-on configuration packages. The process has the following steps (wizard interface):

- **Add-on Package Details**
- **Add-on Package Components - Error/Warnings**
- **Create**

When you are done with each step, select **Next** to go to the next step.

Use the **Save as Draft** option to save your work and change it later.

Add-on Package Details

This step allows you to enter or select the following for the add-on configuration package:

- **Add-on Package Name** (required field)
- **File Name** (required field)
- **Description**
- **Select an add-on component list** (required field): A list of added add-on component lists is displayed under this field, which enables you to select an item to include it in the add-on configuration package. You cannot select more than one item (add-on component list) for the add-on configuration package. The component list must have at least one component selected. The **Shell Type** field is read-only and the value is populated based the component list that you have selected from the list. The possible values for the **Shell Type** field are: **CBS Cost Codes** and **Generic Cost Codes**.

After you select the required fields in the **Add-on Package Details** step and select **Next**, the configuration package components are shown from the components selected during the first step. This is a read-only view of all the components from the selected component lists. For example, if you select "Add-on Component List1" (including the Designs, Configurations, and Setups from Shell Template1), packaged components will show the components from the selected list as follows:

- Designs

- Configurations
- Setups (grouped by Shell Templates node)
- User Defined Reports

The left section of the window displays the grouping node of the packaged components. This is similar to the regular configuration package component view. The right side of the window shows all the packaged components, for each grouping node.

In the right side of the window, the toolbar options are context sensitive and you can expand, collapse, search for the items on the page. You can also filter the components seen on the right side.

Add-on Package Components - Error/Warnings

During this step, first the error check will be performed to determine if the package has errors or not. If the package has no errors, you can see the **Create** step. You will see errors when the packaged components have dependency to the shell attribute design. You can resolve the shell design dependency errors by removing the elements from the tagged components which are dependent on the shell attribute design.

A warning displays if the source and destination tab mapping for line items is incorrect or has been modified in the **Auto-Creation Settings** of that business process.

In the case of seeing errors, you must use **Save as Draft**, fix the errors at the application level, and then proceed to push the package to the **Create** step.

Create

When all the errors are resolved, or there are no errors in the add-on configuration package, you can access the Create step and create the add-on configuration package, with the selected set of components. You can download the package after the creation.

Import:

To import the new add-on configuration package in the destination development environment. The process has the following steps (wizard interface):

- **Select File**
- **Add-on Package Details**
- **User Mapping**
- **Import**

When you are done with each step, select **Next** to go to the next step.

Select File

The fields seen in the Select File step are as follows:

- **File Name:** The exported zip file can be added in this field.

Note

If you select the add-on package in the regular configuration package, the following message will be displayed: "The Configuration Package zip file is an add-on package, not a valid regular package."

- **Add-on Package Name:** You can specify the package name that can be used for import in this field.
- **Description:** You can provide additional description for the add-on package details in this field.
- **Source Shell Type:** This field shows the selected package to import along with the shell type components. The system will populate the shell type value of the selected package. The shell type value is read-only field and can have one of the following values, after you select the file: **CBS Cost Codes** and **Generic Cost Codes**.
- **Select a destination shell template:** This option enables you to select the destination shell template, where the components from source template can be added. By default, it will not show any shell templates. In this shell template log the Shell Number, Shell Name, and Status columns will be available. The Shell Number and Shell Name columns will display the number and name of the shell template. The Status column will show the status of the shell template. All the shell templates seen are grouped by Shell Type. The list of shell templates will be displayed after you select the package file name. The shell templates list displayed will be based on the source shell type. For example, if the add-on configuration package that you have created has source shell template components which are based on CBS Cost Codes (shell), the destination shell templates will show only the shell templates which are of **CBS Cost Codes** type. The same process applies to the **Generic Cost Codes**. Based on the source shell type the list of destination shell templates will be displayed in the Import step of the add-on package window. All active, inactive, and on-hold shell templates will be displayed based on the source shell type. The Find on Page option will be available to search for the shell template based on the name or number. By default, this option will not show any shell templates until you select the file name.
- **Destination Shell Template:** This field gets populated with the selected shell template, from the right side. It displays the "Shell Template Name:Shell Template Number." This is a read-only field and shows the selected shell template. By default, this field does not show any value. If you do not select the destination shell template and select **Next**, the following alert message is displayed: "Select a destination shell template before proceeding to next step." You must select all the required fields before proceeding to next step, in the import add-on package wizard.

Add-on Package Details

When you select the destination shell template in first step and select Next, you can view the selected package details. This is similar to the Add-on Package Components while creating the add-on configuration package. The package components from the selected zip file will be displayed. The options seen in the left navigation list will be the following, based on what is coming from the selected add-on component lists:

- **Designs** (except shell manager)
- **Data Structure Setup**
- **Data Views**
- **Configuration**
- **Company Workspace** followed by **Setup**
- **Source Shell Template Components**

The **Designs** node will show all the designs that are a part of the add-on configuration package. The **Data Structure Setup** will show the data elements or the data definitions that are in the add-on configuration package. Similarly, the other grouping nodes will be shown based on the add-on configuration package contents. The **Shell Template** will show all the components such as setups, access control, and so forth that are a part of the selected add-on configuration package.

User Mapping

After you select **Next** at the **Add-on Package Details** step, you will see the **User Mapping** step. In this step, the BP Auto creator, in BP Setup component, will be extracted for user mapping. For the other component where users or groups are assigned (Example: WF setup or Access Control):

- If all the assignees are groups, the groups will be extracted.
- If all the assignees are a mix of users and groups, only the groups will be extracted.
- If there are no users to map to, the system displays the message: "There are no users to perform user mapping. Proceed to next step."

All other validations will be same as currently seen in User Mapping window while importing configuration packages.

Import

After you select **Next** at the **User Mapping** step, you will see the **Import** step, and the following message will be displayed: "When imported, the designs and setup components in the add-on configuration package overwrite the corresponding designs and setup components residing in destination server. Components from source template will be added to the destination shell template." You have the option to download the impact analysis report. The impact analysis report will be available for you to view after the import has been performed whether the import has been successful or not. Even if you deselect the option, you can still download the impact analysis report (from the *gear menu* ) which will be available for packages in the import-related statuses in the configuration package log.

Find on Page: To filter the rows displayed in the log.

The **Add-on Configuration Packages** log has the following columns:

- **Package Name**
- **File Name**
- **Shell Type**
- **Description**
- **Status**
- **Last Modified By**
- **Creation Date**

The *gear menu* for each item in the **Add-on Configuration Packages** log has the following options:

Option	Description
Open	To open the item
Download	Applicable only to the items with status: Created or Import Success
Download impact analysis report	Applicable only to items with status: Import Success, Import Failed, or Import Error
Delete	To delete the item
Download error/warning report	Applicable only to items with status: Import Success, Import Failed, or Import Error

The **Add-on Configuration Packages** log items are sorted according to the value of the **Creation Date** column, by default. The configuration package name must be unique and

duplicate names are not accepted. If a configuration package exists in draft form, the system will not allow you to create a new (add-on) configuration package.

The following *restrictions* will be applied for the **Add-on Configuration Packages**:

- Additional **Add-on Component Lists** and **Add-on Configuration Packages** will be available only on the development server.
- The option "**Publish to Production**" (in the *gear menu*) will not be available for the **Add-on Configuration Packages**.
- The add-on configuration packages can be imported only within the development servers, from the **Add-on Configuration Packages** node.

Creating Component List

When you create a new component list, you can perform the following actions:

- **Error Check:** When user selects **Error Check**, the **Component Analysis** window opens displaying the list of errors/warning related to the component list.
- **Save:** When user selects **Save**, the component list will be saved with the user entered name.
- **Save As:** When user selects **Save As**, a new window will open asking the user to enter the name for the new list. After selecting **OK** on the window, the existing component list will show the newly displayed name for component list and the user will be able to work on the component list for further edits. At this point, if the previous list has components selected, those components will be retained for the new list. Also, the log will be refreshed to show the new component list created using Save As action. The unique validation for component list will be checked when the user selects **OK**.
- **Cancel:** When user selects **Cancel**, the window will be closed.

With the **Actions** menu, you can also:

- **Select Components & Set Replace in Destination:** When a user chooses **Select Components & Set Replace in Destination**, all highlighted components in the list will be selected for the configuration package, along with the **Replace in Destination** checkbox for each component. After the configuration package is deployed, all selected components will be available in the destination environment, and any existing components in the destination environment will be replaced by the same component in the configuration package, if the component has the **Replace in Destination** checkbox selected.
- **Select Components & Do not set Replace in Destination:** When a user chooses **Select Components & Do not set Replace in Destination**, all highlighted components in the list will be selected for the configuration package, but the **Replace in Destination** checkbox for each component will not be selected. After the configuration package is deployed, all selected components will be available in the destination environment, but any existing components in the destination environment will not be replaced, unless the same component has the **Replace in Destination** checkbox selected.
- **Deselect Components:** When a user chooses **Deselect Components**, all highlighted components in the list will be deselected for the configuration package and will not be sent to the destination environment once deployed. If the component has the **Replace in Destination** checkbox selected, it will also be deselected.
- **Deselect Replace in Destination:** When a user chooses **Deselect Replace in Destination**, all highlighted components in the list will no longer have the **Replace in**

Destination checkbox selected. However, if the component is selected for the configuration package, it will not be deselected with this action.

The left pane of the log displays the components that you can select.

When you select a particular component, the items for the selected component that can be added are listed, and you can select the items individually. You can:

- Use the checkbox, on top, to select/deselect all the items.
- Use the View filter option to perform a quick filter.
- Use the print option to print the list of selected components, in a consolidated format.
- Use the expand all/collapse all to expand or collapse the component seen in the Grouping.

The component list name is unique. If the user tries to create a duplicate list, the system displays an alert message.

The left pane (navigation tree) in the window displays the following nodes:

- Designs (folder)
- Data Structure Setup (folder)
 - Basic Data Definitions
 - Cost Code Data Definitions
 - Data Cube Definitions
 - Data Views
 - Dynamic Data Sets
- Company Access Control
- Configuration
 - Designs such as the Classic Payment Application business process with AI features enabled (cloud only)
 - Log Views
 - Mobile Log Views
 - Pickers
 - Customize Email Subject
 - Customize Email Content
 - Customize Templates
 - User Mode Navigator
 - Portal Landing Page
- Visualizations
 - Data Sources
 - Content
- Integrations
 - Oracle Integration Cloud
- Company Workspace
 - Setup

- Rules
 - Auto Update Status Setup
 - User Defined Reports
- Company Templates
 - Cash Flow
 - Sheets
 - Folder structures
 - Rules
 - User Defined Reports
- Shell Templates
 - Access Control
 - Setup: Select Oracle Integrations configured for Activity sheets in Activity sheet setup.
 - Visualizations
 - Folder Structures
 - Sheets
 - Rules
 - User Defined Reports
- Single Instance Shells
 - Access Control
 - Setup
 - Rules
 - User Defined Reports
- Analytics

The following explains each node in detail.

Designs

The Design components can be selected and included in the component list required for creating configuration packages. The selected Design components overwrite, or insert, deployed/published versions of design components in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

The Designs segment displays the following design components, in groups:

- Business Processes (including those with AI Features enabled)
- Configurable Modules
- Cost Manager
- Document Manager
- Planning Manager
- Portfolio Manager

- Space Manager
- Shell Manager
- User Administration
- Activity Manager

The following columns will be seen for each group:

- **Name**
- **Design ID**
- **Status**
- **Level**
- **Type**
- **Published Version**
- **Deployed Version**

The log is sorted by default on the **Name** column and you can sort the other columns. The upper-right corner of the log has the following options:

- **Selected Components in the List menu:** Enables you to open the **Selected Components** window and see the components that you have selected. This window allows you to find specific components that you have selected and update the list if you have deselected or selected more components.
- **Print:** Enables you to print the list of selected components, in a consolidated format.
- **Exit Component Catalog:** Enables you to close the log.

When the user selects the designs, for any of the design components, the deployed design version will be included as part of the component list.

The published design version will be automatically considered as part of the component list only when there is a dependency from another selected component (for example, selected Setup or Configuration), in the component list. If user has not selected an existing published design, it will not be included in the component list.

The published design version will not be included as a part of the component list if there are no dependencies. If any selected component is dependent upon the current published design version, the system displays messages during error check of the component list, or when the configuration package is being created.

Designs and Document Manager

When the DMS attributes form of the **Document Manager** is included in the component list (to be further included in the configuration package), all the Folder Properties Attribute Forms must be included in the component list with the corresponding Document Properties Attribute Forms and the document logs.

Data Structure Setup

The Data Structure Setup components can be selected and included in the component list required for creating configuration packages. The selected Data Structure Setup components overwrite, or insert, data set/default values in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

The following are the sub-nodes available under Data Structure Setup:

- Basic Data Definitions
- Cost Code Data Definitions
- Data Cube Definitions
- Data Views
- Dynamic Data Sets

Each node, when selected, displays the columns:

- Basic Data Definitions
 - Name
 - Input Type
 - Used in Selected Designs
 - Replace in Destination
- Cost Codes Data Definitions
 - Name
 - Input Type
 - Replace in Destination
- Data Cube definitions
 - Name
 - Description
 - Replace in Destination
- Data Views
 - Name
 - Label
 - Description
 - Replace in Destination
- Dynamic Data Sets
 - Name
 - Description
 - Used in Selected Designs
 - Replace in Destination

The default column sort is the Name column.

Data Structure Setup - Basic Data Definitions

All basic data definitions are available for selection except for the:

- Picker type
- Data picker type
- Check box type DDs

When imported, the data sets/default values of the selected data definitions (included in the package) overwrite the existing data definitions in the destination environment only if the **Replace in Destination** field is checked.

If the data definitions do not exist in the destination environment, all the new data definitions imported as a part of the configuration package are inserted into the destination environment, by the system.

The data sets/default values are not included for the data definitions that are not selected.

If users have defined the data sets/default values in the destination server, those values remain as they are.

Used in Selected Designs

The column will have a "Yes" value for the Data Definitions (DDs) which are being used in the selected designs. If you deselect any particular design in the **Design** node and you then go back to the **Data Definitions** node, the value will be empty for respective DDs.

Note

The data set values are always included for Project phase data definition.

Data Structure Setup - Cost Codes

All cost codes are available for selection.

The selected Cost Codes (included in the package), when imported, overwrite as data sets values for the corresponding Cost Codes existing in the destination environment only if the **Replace in Destination** field is checked. If the Cost Codes do not exist in the destination environment, the new cost codes, imported in as part of the configuration package, are inserted into the destination environment.

The data sets/default values are not included for the data definitions that are not selected.

Data Structure Setup - Data Views

All Data Views are available for selection.

The selected Data Views (included in the package), when imported, overwrite in the destination environment only if the **Replace in Destination** field is checked. If the Data Views do not exist in the destination environment, the new Data Views, imported in as part of the configuration package, are inserted into the destination environment.

The dependency errors related to data views not selected will be checked when component analysis is performed during the configuration package creation.

Note

For a Data View that is dependent on another Data View, there are no dependency errors that are when component analysis is performed during the configuration package creation; however, publishing of the Data View fails because of the dependency and the system displays an error message upon import.

Data Structure Setup - Dynamic Data Sets (DDS)

The DDS are available for selection.

The selected DDS, included in the configuration package when imported, either create a new configuration or overwrite the existing configuration in the destination environment, only if the **Replace in Destination** field is checked.

If the DDS does not exist in the destination environment, the new DDS imported as a part of the configuration package are inserted into the destination environment, by the system.

When a dynamic data set (DDS) is used in a uDesigner object (such as a business process), the DDS configuration that exists in the package must match the DDS configuration that exists in the destination environment. Otherwise, Unifier will mark the process as a data definition conflict, and the import will fail.

Used in Selected Designs

The column will have a "Yes" value for the Dynamic Data Sets (DDS) which are being used in the selected designs. If you deselect any particular design in the **Design** node you then go back to the **Dynamic Data Sets** node, the value will be empty for respective DDS.

Company Access Control

The Company Access Control permissions can be selected and included in the component list required for creating configuration packages. The selected Company Access Control permissions overwrite, or insert, permissions related to groups in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

Displays the following access control permissions, in groups:

- Administrator Mode Access
- User Mode Access

For static modules, there are no error check performed during component analysis. For dynamic modules (such as BP setup in Admin mode access or Data Cubes as Non Navigational Nodes in User mode access), if the user selects modules dependent on components which have not been selected, when the component analysis is performed, the system displays a warning message indicating that the dependent component has not been selected, but the permissions have been selected.

Upon a successful import, the system updates the permissions for the selected modules. If the permissions (transferred as a part of the configuration package for dynamic modules) do not have the dependent components in the destination environment and the configuration package, the permissions will not be imported into the destination environment, and the system displays a message; however, if the dependent components are present in the destination environment, the system updates the permissions, when imported successfully. By default, for "creator users," the permissions will be set to the "importer user" upon the configuration package creation, and in the destination environment.

All Access Control permissions are available for selection.

The selected permissions (included in the package), when imported, overwrite in the destination environment only if the **Replace in Destination** field is checked. If the permissions do not exist in the destination environment, the new permissions, imported in as part of the configuration package, are inserted into the destination environment.

Configuration

The Configuration can be selected and included in the component list required for creating configuration packages. The selected Configuration overwrites, or gets inserted, in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

The following sub-nodes are displayed under the **Configuration** node:

- **Designs**
- **Log Views**
- **Mobile Log Views**
- **Pickers**
- **Customize Email Subject**
- **Customize Email Content**
- **Custom Templates (Custom Prints and Reports)**
- **User Mode Navigator**
- **Portal Landing Page**

Designs

Displays the configuration for the design components available for selection. The grouping, by headers, is as follows:

- Business Processes
- Configurable Module: <CM name>
- Planning Manager
- Portfolio Manager
- Shell Manager
- Space Manager

The following columns are displayed:

- Name
- ID
- Level
- Replace in Destination

Log Views

Displays the log views available for selection. The grouping, by headers, is as follows:

- Business Processes
See [Creating BP Log Views, BP Mobile Log Views, and QBT Log Views in Admin Mode](#) (BP Log Views and Configuration Package) for more information.
- Document Manager Log Views

See [Creating Document Manager Log Views in Admin Mode](#) (Document Log Views and Configuration Package) for more information.

The following columns are displayed:

- Name
- ID
- Level
- Replace in Destination

Mobile Log Views

Displays the log views available for selection, for the Unifier mobile application. The following columns are displayed:

- Name
- ID
- Level
- Replace in Destination

Pickers

Displays a list of pickers that can be added under Configuration. After you add pickers in the component list, the pickers will be listed in the **Selected Components** window.

The **Component Lists** function node, in the **New Component List** window, you can select **Pickers** to see the BPs that have CBS Picker (on the form) listed.

If pickers are added in the Configuration Package for export, the pickers are shown under the **Components** pane in the **Configuration Packages** log after importing the package. After importing the configuration package, if the pickers configuration was added, there will be an entry for **Pickers** under **Configuration** in the "Impact Analysis Report," with the status and <Business Process name>. The **Name** column displays the value in this format: <Business Process name> - Pickers

The values for Status are:

- Added
- Updated
- No change

The following columns are displayed:

- Name
- ID
- Level
- Replace in Destination

Customize Email Subject

Displays the email subjects available for selection. The following columns are displayed:

- Name
- ID

- Level
- Replace in Destination

Customize Email Content

Displays the email contents available for selection. The grouping, by headers, is as follows:

- Business Processes
- Configurable Module: <CM name>
- Planning Manager
- Portfolio Manager
- Resource Manager
- Shell Manager
- Space Manager

The following columns are displayed:

- Name
- ID
- Level
- Replace in Destination

Custom Templates

Displays the Custom Templates available for selection. The grouping, by headers, is as follows:

- Custom Email
- Custom Print
- Custom Report

Note

The system does not display the application type and external type of reports.

The following columns are displayed:

- Name
- Key
- Description
- Replace in Destination

User Mode Navigator

Displays the active and inactive User Mode Navigator available for selection. The following columns are displayed:

- Name
- Type
- Status

- Replace in Destination

Portal Landing Page

Displays the active or inactive portal landing page setup available for selection. The following columns are displayed:

- Name
- Status
- Replace in Destination

Note

To include in the configuration package, you must include all image files and hyperlinks.

Additional Information

Portfolio Manager

As a part of Project Portfolio Manager (PPM) configuration, the **Display monthly breakdown of Actuals** option is included for the Configuration Package.

If the **Display monthly breakdown of Actuals** option is selected when the PPM configuration is being included in the Configuration Package, then upon import to the destination environment, the user will see the checkbox selected.

The Actuals source curve values displayed in the source environment (in the Derived curve properties) will be seen in the destination environment as well, when the **Cash Flow** is packaged as part of the Configuration Package.

Visualizations

Visualization components required for creating configuration packages can be selected and included in the component list. These selected visualization components insert or overwrite published versions of visualization components in the destination environment. An overwrite occurs only if the Replace in Destination checkbox is selected for a component. If the component does not exist in the destination environment, the configuration package inserts the component in the destination environment.

You can include the following visualization components in a configuration package:

- **Data Sources**
Only published data sources can be included in the component list of a configuration package. All data types in the data source definition must be tagged - includes data views, and published business processes. All referenced data views and business processes must be included in the configuration package.
- **Content**
Content items must be published and tagged to be included in the component list of a configuration package. The data source associated with these content items must also be included in the component list of the configuration package. Visualizations can also be included in the component list, provided they are tagged and do not contain local content.

Local content refers to new content items created and is available only for Single instance shells.

Company Workspace

The components for the **Company Workspace** node can be selected and included in the component list required for creating configuration packages. The selected components for the **Company Workspace** overwrite, or get inserted, in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

The following are the sub-nodes for the **Company Workspace** node:

- **Setup**
- **Rules**
- **Auto Update Status Setup**
- **User Defined Reports**

Setup

Displays the Setup (Company level) for the design components (Business Process and Planning Manager) available for selection. The grouping, by headers, is as follows:

- Business Process
- Planning Manager

The following columns are available:

- Name
- ID
- Status
- Replace in Destination

Rules

Displays the Rules (Company level) available for selection. The following columns are available:

- Name
- Control Source
- Status
- Replace in Destination

Auto Update Status Setup

Displays the Auto Update Status Setup (Company level) available for selection. The following columns are available:

- Name
- Status
- Replace in Destination

User Defined Reports

Displays the UDRs (Company level) available for selection. The following columns are available:

- Name
- Data Type
- Report Type
- Replace in Destination

Note

The UDRs listed are in *User* mode.

All the sub-nodes logs are sorted by default on the "Name" column and you can sort on any of the other columns.

Company Templates

The components for the Templates (Company level) can be selected and included in the component list required for creating configuration packages. The selected components for the Templates overwrites, or gets inserted, in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

The following are the sub-nodes for the Company Templates:

- **Cash Flow**
- **Sheets**
- **Folder Structures**
- **Rules**
- **User Defined Reports**

Cash Flow

Displays the company-level Cash Flow templates available for selection. The following columns are available:

- Name
- Detail Level
- Time Scale
- Replace in Destination

Sheets

Displays the company-level Sheets templates available for selection. The grouping, by headers, is as follows:

- Commitment Funding Sheets
- Commitment Summaries
- Configurable Modules : <CM name>
- Cost Sheets (The worksheets will be shown under this same grouping. However, the name for worksheet will be shown as Worksheet : <worksheet name>)

- Funding Sheets
- General Spends SOV sheets

The following columns are available:

- Name
- Description
- Replace in Destination

Folder Structures

Displays the company-level Folder Structures templates available for selection. The following columns are available:

- Name
- Replace in Destination

Note

For Folder structures, under Company Templates, you see the name column that corresponds to all the template name entries coming from Unifier. Only those templates that the user selects are included in the component list.

Rules

Displays the company-level Rules templates available for selection. The following columns are available:

- Name
- Control Source
- Status
- Replace in Destination

User Defined Reports

Displays the company-level UDRs templates available for selection. The following columns are available:

- Name
- Data Type
- Report Type
- Replace in Destination

All the sub-nodes logs are sorted by default on the "Name" column and you can sort on any of the other columns.

Shell Templates

Shell template components can also be selected while creating a component list for a configuration package. In the destination environment, if the component does not exist, the selected shell template components are inserted, or overwritten if they exist and the Replace in Destination check box is selected for that component.

Note

The respective folder properties and associated document properties attributes form and document log must be included as part of the configuration package when any shell, or shell template, (shell, or shell template that does not use the default form) is included. While creating configuration package the user will be notified of the inclusion of these attribute forms by a message.

The Shell Templates displays the available shell templates grouped by their shells. You must select a shell template before selecting the following sub-nodes:

- **Access Control**
- **Setup**
- **Folder Structures**
- **Sheets**
- **Rules**
- **User Defined Reports**

The components are grouped based on the shell template that you have selected. The following explains each component under Components:

Access Control

The Shell Templates Access Control permissions can be selected and included in the component list required for creating configuration packages. The selected Shell Templates Access Control permissions overwrite, or insert, permissions related to groups in the destination environment.

Displays the Shell Templates Access Control permissions available for selection. The grouping, by headers, is as follows:

- Administrator Mode Access
- User Mode Access

The following columns are available:

- Module
- Replace in Destination

The log is sorted by default on the "Module" column and you can sort the other columns.

For static modules, there are no error check performed during component analysis. For dynamic modules (such as BP setup in Admin mode access or Data Cubes as Non Navigational Nodes in User Mode Access), if the user selects modules dependent on components which have not been selected, when the component analysis is performed, the system displays a message indicating that the dependent object has not been selected, but the permissions have been selected.

Upon a successful import, the system updates the permissions for the selected modules. If the permissions (transferred as a part of the configuration package for dynamic modules) do not have the dependent components in the destination environment and the configuration package, the permissions will not be imported into the destination environment, and the system displays a message; however, if the dependent components are present in the destination environment, the system updates the permissions, when imported successfully. By default, for

"creator users," the permissions will be set to the "importer user" upon the configuration package creation, and in the destination. environment.

Setup

Displays the Shell Templates Setup available for selection. The grouping, by headers, is as follows:

- Activity Sheets
- Business Process
- Dashboard
- Gates
- Planning Manager
- Resource Manager
- Shell Manager
- Visualizations
- Configurable Modules : <CM name>
For more information, see [Conditions for Creating a Dashboard Setup Configuration Package](#).

The following columns are available:

- Name
- ID
- Status
- Replace in Destination

The log is sorted by default on the "Name" column and you can sort the other columns.

Folder Structures

Displays the Shell Templates Folder Structures available for selection. The following columns are available:

- Name
- Replace in Destination

The log is sorted by default on the "Name" column and you can sort the other columns.

Note

For Folder Structures under Shell Templates, only the "Name" is displayed, at the root folder name. For example, if there is a folder Test12 available in Documents, the name for the structure will be seen as Documents.

Sheets

Displays the Shell Templates Sheets available for selection. The grouping, by headers, is as follows:

- Configurable Modules: <CM name>
All CM sheets for that specific configurable module will be seen in this group by

- **Cost Manager**
This group will list all the cost sheets, Cash Flow sheets, for the following:
 - Commitment Summaries
 - Commitment Funding sheet
 - General Spends
 - Payment applications
 - <BP name> - SOV
Only those will be seen for which the structure has been created for that particular template.
- **Space Manager**
All Stack plans and level sheets will be seen under this group.
- **Schedule Manager**
All existing schedule sheets will be seen under this group.
- **Activity Manager**
Includes Activity Sheet, WBS Sheet, and OBS Sheet.

The following columns are available:

- Name
- Description
- Replace in Destination

The log is sorted by default on the "Name" column and you can sort the other columns.

Rules

Displays the Shell Templates Rules available for selection. The following columns are available:

- Name
- Control Source
- Status
- Replace in Destination

The log is sorted by default on the "Name" column and you can sort the other columns.

User Defined Reports

Displays the Shell Templates UDRs available for selection. The following columns are available:

- Name
- Data Type
- Report Type
- Replace in Destination

The log is sorted by default on the "Name" column and you can sort the other columns.

Note

Based on the shell template selected, only the components related to the selected shell template are displayed and available for selection. If you deselect a previously selected shell template, the components of the deselected shell template do not display; however, if you select the deselected shell template, the components are displayed.

Defining Shell-Specific Custom Print Templates for Business Processes

In addition to editing shells that you have permissions for, you can view all Custom Print Templates and define them at the shell level. After you choose a shell template in the

Company Workspace tab, select  in the upper-right corner of the dashboard, and then select **Details**. In the **Details** window, a **Custom Print Template** tab is available.

The **Custom Print Template** tab contains a short description detailing its functionality and an **Add Selective Custom Print Templates** checkbox. The checkbox is deselected by default, which means every template that is available for BPs is available at run-time. If the checkbox is selected, only the selected templates are available at run-time and the user can add them to the shell.

Upon selecting the checkbox, a grid is displayed with  **Add Templates** and **Find on Page**  options. When you select **Add Templates**, a new window is displayed where you can select a Business Process from the list.

After you choose a BP, you can select the custom print templates that you want to add in the shell. The options for custom templates include all Published and Legacy templates.

After you select one or more templates, you can add them to the **Selected Items** list by selecting the **Right** arrow. If you want to remove a template from the list, select the template, and select the **Left** arrow. After selecting **Save**, the **Add Custom Print Template** window is closed and the chosen templates are displayed in the previous grid.

To delete a newly added template, select **Delete**  in the far right column of the grid. To find a specific template, select **Find on Page**.

Supporting Shell Attribute View Forms

Since you can include **View Forms** in shell attributes and restrict users and group (who are members of the shell) to view the forms added to the shell properties (**View Forms** tab), you can use the **Configuration Package** to export and import the **View Forms** tab information (along with other tabs) of the shell properties of your selected shell templates or single instance shells.

In general, you can export and import the shell attribute design (which includes both the action forms and the view forms), and the view form permission settings (added in the **View Forms** tab of the shell or shell template properties), by way of **Configuration Package**.

Configuration Package export for shell templates and single instance shells

When you tag one or more shell templates that have view forms set up in the **Component List**, then along with other shell tabs the **View Forms** tab information will be exported, when you create the **Configuration Package**.

Along with the view forms, the users, groups, and shell administrator, who are part of the permission settings of view forms, will be exported. For other modules in the BP setup, the users, groups, and shell administrator associated to the permission settings will not be exported. In other word, the users, groups, and shell administrator associated to the permission settings in the View Forms tab of the BP setup will not be exported; however, the users, groups, and shell administrator permission settings in the view forms setup (in the Shell Attribute Form) will be exported.

When the published shell design does not have all the view forms added in the tagged shell template in the **Component List**, the design dependency error is displayed when you conduct error check in the **Component List**. Add the dependency component to fix this error.

If you tag a shell template (that has view forms) in the **Component List**, and the published design has those view forms already, the system does not validate for the latest deployed design. Also, if the tagged shell template does not have any view forms, and the shell design is published, the system does not validate for any latest deployed design while creating the **Configuration Package**. Similarly, when you tag a single instance shell and the selected shell instance has view forms set up, along with the other tab information all the view forms and permission settings (for the users, groups, and shell administrator) will be exported.

Import of Configuration Package containing shell templates with view forms

When you import the **Configuration Package** containing shell templates with view forms into the destination server:

- If the shell template does not exist, a new template will be created and view forms setup information (forms and permission settings for groups) will be added.
- If the destination server already has the shell template, the view forms setup information will be updated by way of importing the **Configuration Package**.
- If **Configuration Package** created has a single instance shell with the view forms setup, then in destination server the single instance shell will be imported when the component does not exist. The view forms setup information is also imported along with the other tabs. If the destination server already has a single instance shell, the single instance shell information will not be updated, including view forms information.

Single Instance Shells

The components for the Single Instance Shells can be selected and included in the component list required for creating configuration packages. The selected components for the Single Instance Shells overwrites, or gets inserted, in the destination environment.

Note

- The Replace in Destination option is not available for components in this node, as all components will be overwritten.
- In Single Instance Shells, settings like Workflow Setup are treated as instance-specific rather than template-driven. These configurations are often adjusted directly within the destination environment to meet project-specific requirements (for example, assignee groups, CC users, completion policies). As a result, the system intentionally prevents these settings from being overridden by importing additional configuration packages. You can import the Workflow Setup for business processes (BPs), the Dashboard, and the Planning Manager from your source server to your destination server during the first import of the Single Instance Shell. For subsequent imports, any changes made on the source server are treated as **No Change** and will not be applied to the destination server. To reflect updates in Workflow Setup and other settings for Single Instance Shells, any changes must be manually applied in the destination environment after the initial import.

The Single Instance Shells option displays the available shells for selection. You must select a shell from the Single Instance Shells before selecting the following sub-nodes:

- **Access Control**
- **Setup**
- **Rules**
- **User Defined Reports**

The components are grouped based on the shell template that you have selected. The following explains each component under Components:

Access Control

The Single Instance Shells Access Control permissions can be selected and included in the component list required for creating configuration packages. The selected Single Instance Shells Access Control permissions overwrite, or insert, permissions related to groups in the destination environment.

Displays the Single Instance Shells Access Control permissions available for selection. The grouping, by headers, is as follows:

- Administrator Mode Access
- User Mode Access

The Module column is available under each node listed above. It displays a list of modules such as Activity Manager / Activity Sheet, Visualizations, and so on.

The log is sorted by default on the "Module" column, and you can sort the other columns.

For static modules, no error check is performed during component analysis. For dynamic modules (such as BP setup in Admin mode access or Data Cubes as Non Navigational Nodes in User Mode Access), if the user selects modules dependent on components which have not been selected, when the component analysis is performed, the system displays a message indicating that the dependent object has not been selected, but the permissions have been selected.

Upon a successful import, the system updates the permissions for the selected modules. If the permissions (transferred as a part of the configuration package for dynamic modules) do not have the dependent components in the destination environment and the configuration package, the permissions will not be imported into the destination environment, and the system displays a message; however, if the dependent components are present in the destination environment, the system updates the permissions, when imported successfully. By default, for "creator users," the permissions will be set to the "importer user" upon the configuration package creation, and in the destination.

Setup

Displays the Single Instance Shell Setup available for selection. The grouping, by headers, is as follows:

- Activity Sheets
- Business Processes
- Dashboard
- Resource Manager
- Shell Manager
- Configurable Modules : <CM name>
- Visualizations

The following columns display for each node listed above:

- Name
- ID
- Status

The log is sorted by default on the "Name" column, and you can sort the other columns.

Rules

Displays the Single Instance Shells Rules available for selection. The following columns are available:

- Name
- Control Source
- Status

The log is sorted by default on the "Name" column, and you can sort the other columns.

User Defined Reports

Displays the Single Instance Shells UDRs available for selection. The following columns are available:

- Name
- Data Type
- Report Type

The log is sorted by default on the "Name" column, and you can sort the other columns.

Note

Based on the Single Instance Shells selected, only the components related to the selected Single Instance Shells are displayed and available for selection. If you deselect a previously selected Single Instance Shells, the components of the deselected Single Instance Shells do not display; however, if you select the deselected Single Instance Shells, the components are displayed.

Defining Shell-Specific Custom Print Templates for Business Processes

In addition to editing shells that you have permissions for, you can view all Custom Print Templates and define them at the shell level. After you choose a shell template in the

Company Workspace tab, select  in the upper-right corner of the dashboard, and then select **Details**. In the **Details** window, a **Custom Print Template** tab is available.

The **Custom Print Template** tab contains a short description detailing its functionality and an **Add Selective Custom Print Templates** checkbox. The checkbox is deselected by default, which means every template that is available for BPs is available at run-time. If the checkbox is selected, only the selected templates are available at run-time and the user can add them to the shell.

Upon selecting the checkbox, a grid is displayed with  **Add Templates** and **Find on Page**  options. When you select **Add Templates**, a new window is displayed where you can select a Business Process from the list.

After you choose a BP, you can select the custom print templates that you want to add in the shell. The options for custom templates include all Published and Legacy templates.

After you select one or more templates, you can add them to the **Selected Items** list by selecting the **Right** arrow. If you want to remove a template from the list, select the template, and select the **Left** arrow. After selecting **Save**, the **Add Custom Print Template** window is closed, and the chosen templates are displayed in the previous grid.

To delete a newly added template, select **Delete**  in the far-right column of the grid. To find a specific template, select **Find on Page**.

Analytics

The Analytics can be selected and included in the component list required for creating configuration packages. The selected Analytics overwrites, or gets inserted, in the destination environment. Overwrite only occurs if the **Replace in Destination** checkbox is selected for the component. If the component does not exist in the destination environment, the configuration package will always insert the component into the destination environment.

When you select Analytics, the system displays a list of analytics available for selection.

The log contains the "Name" and "Replace in Destination" columns only.

Cost Attributes - Cost Sheet

If the **Analytics Cost Sheet** node is selected, users can export and import the Configuration Package to other environments.

After you defined mappings (in the **Data Mapping - Cost Attributes** tab), if the option **Cost Sheet** is selected (located under **Analytics** in the **Configuration Package** selected in the

Component Lists node), the source design, in uDesigner (Cost Code Attributes (Design ID = standard_cost)) has to be selected.

Component Analysis for Component Lists

You can perform component analysis for the components that you have selected in the component list. When you select **Error Check**, in the component list creation screen, the system displays the component analysis screen.

The following conditions apply when you import a configuration package containing referenced user attributes into your destination environment that has user attribute design:

- You can import a configuration package containing referenced user attributes into your destination environment that has user attribute design provided that the user attribute design in your destination environment has matching data element names and data definitions.
- You cannot import a configuration package containing referenced user attributes into your destination environment that has user attribute design, but the user attribute design does not have matching data element names and data definitions.
- To import a configuration package containing referenced user attributes into your destination environment that does not have user attribute design, you must first add the user attributes to the user attribute design of the destination environment and deploy before you can complete the import successfully.

In case of errors, the system displays the following error types;

- Dependency errors
- Miscellaneous errors
- Warnings

Dependency Errors

These errors are displayed when the components available inside the component list have dependency errors. Dependency errors occurs when the user has selected primary components in the component list but did not select the dependent components.

Example

While creating a component list, the user selected a UDR report but did not select the dependent BP design.

The system displays dependency errors as groups, in the Component Analysis screen, and the Fix Action column displays a symbol. If you hover over the symbols displayed, the system displays the action that you need to take.

To correct a dependency error, you have two options:

1. Add the missing component  (check mark in a circle)
You can add the dependent components (in the error list) and resolve the errors.
2. Remove the existing component (minus sign in a circle)
You can remove the selected components from the list and resolve the errors.

The system processes the error list and the list can be refreshed by selecting Refresh.

Miscellaneous Errors

These errors are encountered when the components have other miscellaneous errors that have to be fixed at the application level.

Warnings

The system displays warnings related to components present in the component list, using  (the yellow triangle symbol). For example, if you want to use the data visualization or AI features with BPs, you need to use the Business Process Identification Tag option to select a predefined tag.

For existing business processes, a warning message displays while creating a component/ Add-on component, if the source and destination tab mapping for line items is incorrect or has been modified in the auto-created Business Process (BP) Item Logs tab name.

Creating Configuration Packages

In the Configuration Package log, you can create configuration packages that do not have user attribute design included in the package but have custom user attributes, including the picker elements. All the referenced processes must be included in the configuration package. If the custom user attribute is a data picker, the data source and display element will be included in the package, if created successfully after error resolutions.

Prerequisite

Ensure you have created a component list or an add-on component list.

Procedure

Configuration packages are created using the **New Configuration Package** wizard.

To create configuration packages:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Configuration Packages**.
3. In the **Configuration Packages** log (right pane), select  **Create** to invoke the **New Configuration Package** wizard.
4. In the **Package Details** step, select one or more component lists that have components that refer to the custom user attributes.
5. Enter the following information:
 - a. In the **Package Name** field, enter a user-friendly name for the configuration package.
 - b. In the **File Name** field, enter the file name for the configuration package. Otherwise, defaults to the Package Name entered above.
 - c. In the **Description** field, enter the purpose of the configuration package. Otherwise, defaults to the Package Name entered above.

- d. In the **Select one or more component lists** section, select the component lists to include in the configuration package, and select **Next**.
6. In the **Package Components** step:
 - a. Review all the components selected in the component list, including the data definitions for user data picker and custom user attributes. The referenced user attributes will be included in the package.
For example, the following categories may display for the selected component list: Designs, Configuration, Analytics, and so on.
 - b. (Optional) Perform any of the following actions:
 - To search data for each column, select **Filter**.
 - To print a consolidated report based on selected components, select **Print**.
 - c. Select **Next**.
7. (Optional) In the **Errors/Warnings** step, review any errors or warnings displayed such as dependency errors, inclusion of custom user attributes referenced in the selected components, or user attribute designs missing in the selected component list.
 - a. Resolve each type of error or warning as follows:
 - Resolve dependency errors dynamically. After resolving the errors dynamically, select **Back** to see the results.
 - For other types of errors, save as draft, fix the errors at the application level, and then run the step.
 - b. To check for resolved errors or warnings, select **Refresh**.
 - c. Select **Next**.
8. In the **Create** step, select **Create** to create and publish your configuration package for production.
9. After creating the package, select **Download** to download the configuration package zip.

Creating a Configuration Package for Export

When creating a configuration package for export, if the selected components have references to the custom user attributes, you are not required to tag the user attribute design.

When you create a component list, or when you edit an existing component list, if the tagged components have dependency on the user attribute design, the **Component Analysis** window does not display the dependency errors; instead, the Component Analysis window displays the warnings related to the user attribute design that were not selected.

Note

If there are component lists that are in Error Status because the user attribute design was not included before an upgrade, the Error Status will remain unless you run the error check again.

Example

The "EmployeeID" data element, in the user attributes, is referenced in filtering conditions in the "Action Items" BP workflow setup. In this case, the "EmployeeID" data element will be

included in the packaged components, and the following warning messages will be displayed, with the first warning message indicating that the user attribute design is not included in the component list:

- The selected components have references to the custom user attributes and <user attribute design name> is missing in the component list.
- The additional filtering conditions in the component list, defined in the workflow business process setup of Action Items, requires the "EmployeeID" data element in user attributes and will be included.

The first warning message indicating that user attribute design will not be included in the component list will be shown only when user attribute design is not selected and the design is not published.

- Component Name should be User Administration.
- Location Column should be shown as Design.
- Name should be shown as <user attribute name>.

There will be an additional note displayed in the top section of the **Component Analysis** window, and it will be as follows: "Note The package created using this component list does not include user attribute design. You can include the user attribute design by fixing the dependency warning to create a package for production."

In this case, the **Component Analysis** window will show warning messages detailing the inclusion of customer user attributes referenced by user pickers, user data pickers, BP setup filter conditions, and so forth that are in the selected components.

All the custom user attributes referenced by the selected designs, setups, and so forth, in the component list, will be included without including the user attribute design.

In the **Component Analysis** window, the **Fix Action** option  is provided to enable you to include the dependent user attribute design into the component list created and apply the changes.

The components which have custom user attributes references will be displayed as warnings in the **Component Analysis** window, and there will be a resolving action (minus sign in a circle) to enable you to exclude those components.

Note

If in the source environment the user attribute design is already published, the design will always be included and no additional warnings will be seen.

If the published user attribute design does not have all the data elements that are referenced by the selected components (such as BPs), an error message will be displayed.

If, in the source server, the components selected in the component list have custom user attributes that are data pickers that refer to another design, Unifier displays errors when you are creating the configuration package, or performing error check in the component list. You must select the user attribute design if there are pickers in the custom user attributes in the package.

Example

When a BP WF setup assignee filter conditions have Space DP display as one of the conditions, the following error message will display while performing export: "The additional

filter conditions defined in the workflow for Action Items business process setup requires data picker elements Space DP in user attribute design [User Attributes]. The user attribute design that has data picker elements must be included in the component list."

The above error can be resolved by including the user attribute design into the component list.

Exporting CBS Picker Query Modifications

You can export a BP configuration package that contains a CBS Picker with defined query condition into the shell template.

If you select the **Replace in Destination** option, you ensure that your CBS Picker with defined query condition is accessible in the destination server, after importing the added configuration package (as add-on) in the development environment.

Pickers in Add-on Component List

In the **New Add-on Component List** window, left pane, you can select the **Pickers** configuration component to see the list of BPs that contain CBS Picker data element (bitemID).

The **Selected Components** window lists the added BPs, which contain the CBS Picker data element (bitemID), under the **Configuration** category, with **Picker** as the **Component**.

Add-on Component Analysis

After you tag a component in the add-on component list, the system opens the **Add-on Component Analysis** window and displays errors and warnings, if applicable.

Note

You cannot include a shell design in the add-on component list.

If pickers are added in the add-on configuration package for export, then after importing the add-on configuration package the system will include **Add-on Configuration Components** as a functional node under the **Configuration Package** group node, in the left Navigator.

The system will also include an entry for pickers under **Configuration** in the **Selected Components** window. Additionally, in the **Impact Analysis Report**, there will be an entry for pickers under Configuration including the status (**Added**, **Updated** or **No change**) and the BP name.

Creating a Configuration Package for Import

In the **Configuration Packages** log, when you select the **Import** toolbar option, the **Import Configuration Package** window opens.

The **Import Configuration Package** window has the following steps that you can complete through corresponding wizards:

Step	Description
Select File	This step has the following fields: • File Name (required) • Package Name (required) • Description You must select a valid zip file from the local system for the File Name.
Package Details	This step displays the configuration package components from the selected zip file. It also shows only those categories and components that are in the selected configuration package. If the package contains <i>new</i> Shell Templates or Single Instance Shells, the Replace Shell Currency in Destination column includes a checkbox that is selected by default and the new items are automatically configured to use the currency reflected in the Destination Base Currency at the top of the page. If the new templates or shells are set to a currency that differs from the destination's base currency, deselect the checkbox to use the currency of the templates and shells included in the configuration package. When you select Next, select Yes to acknowledge that you cannot change the default shell currency and to continue to the next step. If available, the "Data Structure Setup" category (on the left Navigator) shows the additional user attributes data definitions and dependent user data picker definitions that are a part of the configuration package.
User Mapping	Unifier extracts the user's information for user mapping: • Shell Administrator • Auto-Creator for Business Process records or line item. Only the groups will be extracted from other components.
Import	See below.

Import

In this step you can:

- Indicate whether you want to import the associated component lists along with the configuration package.
When you select the **Do you want to import the associated component list?** option, the system allows you to import the associated component lists along with the configuration package, if necessary. For more information, see [Creating Configuration Packages](#).

When you select the option the system enables you to enter the name of the associated component list in the **List Name** field. In this case, the system will perform the necessary validations when you select **Import**.

If you enter the name of an existing component list in the **List Name** field, the system will replace the existing component list. Otherwise, the system will create a new component list, upon a successful import of the configuration package.

When you import the configuration package successfully, the system creates the new component list and assigns the error check status as pending.

All the packaged components are shown as selected in the component list.

If the component list has the option Replace in Destination selected in the source, the system retains the property for the selected components in the component list.

When the configuration package has been imported successfully, the system adds the published designs into the configuration package automatically, if the designs have been referenced, and the component is in the destination. In this case, the system tags all the published designs that have been referenced in the component list that has been created in the destination.

You can filter the selected component lists.

The system will always create a component list, if:

- It is selected to create one in the import step, and
 - The package import is successful.
- Select **Download the Impact Analysis Report** option, and select **Import**.

In the **Import User Attributes** window, you will see whether the selected configuration package has custom user attributes that are not existing in the user attribute design in destination environment. If the custom user attributes exist in the destination, the **Import User Attributes** window will not be displayed.

In the **Import User Attributes** window, you will be provided with the list of data elements (from the configuration package) that do not exist in the destination user attribute design. The **Import User Attributes** window allows you to choose one of the following actions, if in the destination user attribute design does not exist:

- **Add the data elements to the <destination User Attributes form> user attribute design.** (selected by default)
Select this option, and proceed with the import of package by selecting **Continue**. The import process might result in an error if, for example, the status of the user attribute design is **Draft**, or if there is a mismatch between the "design" and the "deployed" versions of the "design."

This option enables the import process to continue. If there are no other errors, the custom user attributes will be added to the destination user attribute design if the "design" and the "deployed" versions are the same and the "design" is in a complete status.

- **Add the data elements to the Data Structure Setup but not to the user attribute design**
Select this option, and proceed with the import of package by selecting **Continue**. The import process results in an error because the user attributes are not added to the user attribute design. Add the data elements to the user attribute design and try to import again.

This option enables the import process to continue. The data elements will get added into the destination server even if the import fails because of referenced user attributes in the configuration package.

During import, the additional custom user attributes that do not exist in the destination will be added to the user attribute design, based on the following conditions:

- User attribute design in the destination should be in Complete status.
- In the destination server, the user attributes design and the deployed version should match.

If the above two conditions are met, the additional custom user attributes will be added to the destination user attribute design, after the import.

Note

In the above case, the destination server user attribute design is allowed to have a higher version than the source.

If any one of the above conditions are not met, the import fails.

You have the option to download the impact analysis report and view the import errors and warnings, by using the *gear menu* (⚙️) which will be available for the configuration packages that you had selected for import (in the configuration package log). In addition, if the custom user attributes that are coming as part of the configuration package exist in the destination, then:

- If the data element name and data type (or data definition) match (and are not currently a part of the user attribute design), the data elements will be added, if the above conditions are met.
- If the data element name and data type (or data definition) match (and are currently a part of the destination user attribute design), no changes are needed.
- If the data element name and data type (or data definition) do not match, import fails. In the case of adding new data elements (custom user attributes) into the destination, and the data definition exists with same name but with different definition, the following error message is displayed in the errors and warnings report: "The data element {0} from the Configuration Package cannot be added to the destination environment due to conflict in data definition {1}." The "Component" for this message is the "User Attributes," and the "Location" will be "Designs."

If you select **Cancel**, or close the **Import User Attributes** window, the following confirmation message is displayed: "The import process will be canceled. Do you want to continue?" If you select **Yes**, the Import User Attributes window closes, and the import process stops.

The data elements that do not exist in the destination server are displayed in the grid and will have the following columns:

- **Data Element:** Displays the name of the data element.
- **Data Definition:** Display the data definition of the data element.
- **Data Type:** Displays the data type of the data definition.
- **Input Type:** Displays the Input Method of the data definition.

When the destination server does not have a User Attributes form defined, if in the destination server there is no user attribute design, and the configuration package has custom user attributes, the following message appears in the errors and warnings report, after you select **Import**: "Import has failed. The destination server does not have the user attribute design that can add the custom user attributes included in your package."

When you import the configuration package (**Import Configuration Package** window), and you select **Yes** to create a component list associated to the configuration package (**Do you want to create a Component List associated to the package?**), the system will update the component list entries, but the entries will not display in the log, right away. To see the updated component list, select **Reload** on the **Configuration Packages** functional node.

Data Structure Setup Component in Impact Analysis Report

The impact analysis report is created whether the configuration package import succeeds or fails. When a configuration package has custom user attributes, and you have selected to add the custom user attributes (data elements and dependent data definitions) in the **Import User**

Attributes window (**Add the data elements to the Data Structure Setup but not to the user attribute design**), the impact analysis report lists all the data elements that are added into the destination server. That is to state that the **Data Structure Setup** window lists components affected in data structure setup by providing the following information in column format:

- **Component**
- **Status**
- **Name**
- **Description**

The Data Structure Setup module shows the additional data elements that were included in the destination server because of importing the configuration package. In the report:

- **Name** column will show data element name that was added
- **Description** column will show as "Included but have not been added to user attribute design."
- **Status** column shows "Added." The Status column also shows the data elements that are not added because of the data definition conflicts as "Not Added" and the corresponding Description column cell provides the reason for not adding the data elements to the destination server data structure setup. The data elements that are not added, or basically not changed, in the destination server will be captured because the elements exist in the destination server. In this case, importing of the configuration package will result in error even if the data elements are added to the Data Structure Setup.

If you select the **Add the data elements to the <destination User Attributes form> user attribute design** option in the **Import User Attributes** window, the impact analysis report displays the user attribute design (in the destination server) as updated. In this case:

- An additional section for the Data Structure Setup components will be displayed in the impact analysis report. The impact analysis report will be the same as seen when the data elements are added as a part of the design import.
- The **Description** for the data elements added will be displayed as: "Included and have been added to user attribute design."

Similarly, if the import results in error because of the data definition mismatch, it will be captured as a part of the regular error/warnings report.

In the case when you select the **Add the data elements to the Data Structure Setup but not to the user attribute design** option, but the import fails because of the user attribute design (in the destination server) is not in complete status, if the custom user attributes exist in destination server, the user data elements will be added. In this case, the impact analysis report displays the list of the data elements that are added, and the data elements that are not changed. This is the case where custom user data elements are added successfully in the destination server.

The descriptions for the data elements that are added to the destination server but not to the user attribute design will show: "Included and added to the data structure setup."

The descriptions for the data elements that are added to the destination server but not to user attribute design will show: "Ignored because the data element exists in destination server."

Importing the User Data Pickers

The data elements and data definitions of the user data picker will be imported into the destination server if the user data picker definition is not defined.

The display element will be added into the user attribute design if you select the option to add the display element into the User Attributes form of the destination server.

Unifier ignores the user data picker in the configuration package ("There is a mismatch between the package and this server for the display element of <user data picker> data definition. No changes will be done to the existing definition upon import.").

The errors and warnings report displays the detail of the user data pickers that are ignored during the configuration package import, if they exist in the destination server.

Impact of Base Currency on Currency for Shells or Templates in Source and Destination

When you import a configuration package that includes different currencies, you must decide how the system should process changes. For example, if the package contains new templates or shells that are set to use a currency that does not match the destination's Base Currency setting, the system automatically selects the checkbox in the Replace Shell Currency in Destination column includes a check box. If you want the new Shell Templates or Single Instance Shells included in the package to retain their different currency settings, you must deselect (clear) the check box.

The following table provides examples that show the effect of currency settings.

Source's Base Currency	Destination's Base Currency	Checkbox for Destination	Result of Import
Base Currency: USD Shell or Template: USD	Base Currency: USD	Not displayed as currencies match	No change to currency
Base Currency: USD Shell or Template: USD	Base Currency: INR	Displayed. Selected by default	Selected: Shell or Template currency changes to INR Deselected: Shell or Template currency remains USD
Base Currency: INR Shell or Template: INR	Base Currency: USD	Displayed. Selected by default	Selected: Shell or Template currency changes to USD Deselected: Shell or Template currency remains INR

Configuration Package with Custom User Attributes (Exporting)

Even if the configuration package components have references to custom user attributes, as an administrator you can export (and import to the destination environment) a configuration package that includes all types of custom user attributes without the need to include the source user attribute design in the configuration package. This includes shell data pickers, BP data pickers, and so forth.

Note

The export process applies to both the configuration packages and the add-on configuration packages.

The following lists the referenced user attributes in a component package that can be imported to the destination environment:

- Data elements that are data pickers and shell pickers and do not exist in the destination server.
- Data elements that are user data pickers and display elements and do not exist in the destination server.
- Data elements that are data pickers, shell pickers, along with referenced data sources and display elements that exist in the destination.
- Data elements that are data pickers, shell pickers, and the referenced data sources that do not exist in the destination.

 Note

If the custom user attribute is a user data picker, both the data picker element and its associated display element will be included in the configuration package.

The system will display messages if custom user attributes such as data pickers are referenced in the following components of the configuration package:

- Workflow setup filtering conditions
- User Data Picker query conditions
- User Defined Report or Data Cube query conditions
- Auto update Status Setup query conditions
- Auto populate and reverse auto populate definitions referencing User Data Picker in any design
- Any design that has custom user attributes referenced through User Data Picker

Configuration Package with Custom User Attributes (Importing)

This topic explains the importing of a Configuration Package with custom User Attributes that includes pickers without user attribute design.

 Note

The import process applies to both the configuration packages and the add-on configuration packages.

When you select the component package that has custom user attributes without including user attribute design in the import wizard, navigate to the last step, and select **Import**, the **Import User Attributes** window opens.

Note

The **Import User Attributes** window will be displayed only if the components package has custom user attributes without the source user attribute design.

In **Import User Attributes** window:

- The list of data elements will include all the custom user attributes that are a part of the source package and do not exist in destination environment user attribute design.
- The list of data elements will also include the pickers like shell data picker, shell pickers, and other data pickers that are referenced in the components in the source server. In case that the user data picker is a custom user attribute, the display data element of the user data picker will also be seen in the list of data elements.
- You can see the list of data elements from the component package that do not exist in the destination environment user attribute design.
- You can add the data elements into the destination environment user attribute design by selecting the **Continue** option. If you decide not to change the destination environment user attribute design, you can select **Cancel** or close the window to cancel the importing process.

Importing Data Elements that are not Pickers

This topic explains the importing of a Configuration Package with custom User Attributes that do not include pickers.

When you select the component package that has custom user attributes that are not present in the destination environment user attribute design, the **Import User Attributes** window opens.

In **Import User Attributes** window, the list of data elements will include all the custom user attributes that do not exist in the destination environment user attribute design. You (the administrator) will have an option to continue with the import of custom user attributes into destination environment user attribute design, or they can cancel the import.

When importing the data elements into the destination environment user attribute design:

- If the data elements and data definitions do not exist in destination environment user attribute design, Unifier creates the data elements and data definitions and adds them to the destination environment user attribute design.
- If the data elements do not exist, but the data definitions exist with same definition type, Unifier creates the data elements and adds them to the destination environment user attribute design.
- If the data elements do not exist, but the data definitions exist with a different definition type (different than that of the source), Unifier does not create the data elements, and the import fails.

Impact Analysis Report

In case of the import being successful, the impact analysis report shows that the user attribute design in the destination environment as updated. An additional section for **Data Structure Setup Components** will be included in the impact analysis report, and the custom user attributes will be added.

In the case where the data elements are added, Unifier displays the message: Added to the Data Structure Setup and included in the destination user attribute design.

The **Data Structure Setup Components** section in the impact analysis report will show the user attributes (data elements) that are added or not changed only when the import of adding custom user attributes into the destination environment user attribute design is successful. The **Status** column will show the status of the data element accordingly as either added or not changed. The **Description** column will show the details.

Importing Data Elements that are Pickers

This topic explains the importing of a Configuration Package with custom User Attributes that include pickers, but the pickers do not exist in destination user attribute design.

When you select the component package that has custom User Attributes that include pickers, but the pickers do not exist in destination user attribute design, the **Import User Attributes** window opens.

In **Import User Attributes** window, when the custom user attributes are picker elements, the list of picker data elements are shown in the **Import User Attributes** window, similar to other data elements if they do not exist in the destination environment user attribute design. The following provides more details:

- **When the data picker element, data source, and display element do not exist in the destination server**
 - If in the destination server the custom user attribute which is a data picker element does not exist, the data picker definition will be added to the destination server by adding the data source and display element. The user attribute data picker element will be created and added to the destination user attribute design. Similarly, the display element will be added, if the display element does not exist in the destination.
 - If the display element exists with different definition, the import will fail and no data picker definition will be created in the destination server.
 - If the data source has referenced another design, the referenced design is imported to the destination server. The import will fail if the referenced design exists with different ID and so forth. All the existing import logic for the referenced designs will remain as is.
- **When the data picker element and data source do not exist, but the display element exists in the destination server**
 - If in the destination server the custom user attribute which is a data picker element and the referenced data source do not exist but the display element exists, the data picker definition will be added by adding the data source. Also, the referenced data picker user attribute will be created and added to the destination user attribute design.
 - If the display element does not exist but the data definition of the display element exists with different definition from the source, the import will fail while adding display element and no data picker definition will be added. All the existing import errors will be displayed in this case.
- **When the data picker element does not exist but data source exists in the destination server**
 - If in the destination server the custom user attribute which is a data picker element does not exist but the data source exists with the same ID or Design, the data picker definition will be added, and the element will be created successfully. The display element will be added if it does not exist in the destination server, and the referenced picker element will be added to the destination user attribute design.
 - The import will fail if:
 - * The data picker source design does not match with the source, or

- * The display element exists with different data definitions, or
- * The display element data definition name exists with different definitions

All the existing import errors will be displayed in this case.

- **When the data picker element exists with different data source in the destination server**

If in the destination server the data picker element data definition exists with source different than the one in the package, the data picker element creation will result in error, and the import will fail. All the existing import errors will be displayed in this case.

- If in the destination server the data picker element with data definition exists but the display element is different than the one in the source, the destination data picker element will not change, and the import will be successful after adding the data picker element to the destination user attribute design.

- **When the data source has picker elements that refer to another designs**

- When the data picker data source has referenced other designs, the referenced designs will be imported into the destination along with the data source import. All the existing import errors will be displayed in the case where the referenced design ID or name exists, but it does not match with the source.

Impact Analysis Report

The impact analysis report will show the custom user attributes which are data pickers or shell pickers that were added, not added, or not changed along with other user attributes, in case of successful and failed imports. The **Status** and **Description** fields will provide details.

Component Analysis for Add-on Component Lists

Similar to the **Component Lists**, when you select the shell template components to create an add-on component list, if the selected components have references to the custom user attributes, the system displays a warning message informing you that the user attribute design is missing in the **Add-on Component List** and provides the option to include the design through **Fix Action** option .

The following warning message is displayed in the **Add-on Component Analysis** window when the selected components have references to custom user attributes and user attribute design is not selected: "The selected components have references to the custom user attributes and <user attribute design name> is missing in the component list."

In the **Add-on Component Analysis** window, you can use the **Fix Action** option  to include the dependent user attribute design into the component list created and apply your changes. After applying your changes, the warnings (related to user attribute design not included in the component list) will not be displayed.

The **Add-on Component Analysis** window also displays additional warning messages for the referenced custom user attributes in the selected components (such as designs, BP setups, UDRs, and so forth) that will be included in the configuration package, when the user attribute design is not included.

Example

The "Action Items BP" has the user data picker "Assignee DP," and the "Assignee DP" has display element name "empEmployeeDepartment" which is a custom user attribute. In this case, the following warning message is displayed: "empEmployeeDepartment in User Attributes is referenced by data definition Assignee DP will be included."

The add-on component lists can be saved with or without performing error check, similar to the component lists.

The components that have custom user attributes references will display warnings in the **Component Analysis** window, and there will be a resolving action for you to exclude those components.

Importing Configuration Packages

When a configuration package is imported into the destination environment, the items in the **Component Lists** that have been modified override (replace) the existing items in the destination environment.

There are cases that require the new configuration package not to override the existing items in the destination environment.

Example

In the Production environment, a user changes the:

- Values associated with a drop-down (pull-down) data definition
- Data Views
- Custom Templates

In this case, the user does not want those values to be replaced when a new configuration package is imported.

You (the Administrator) can define whether certain types of elements in the Component Lists of the configuration package can override the existing items in the destination environment. As a result, when you import a configuration package, you can see the following after the import:

- Components that exist in the destination environment and are set to not be replaced are not replaced or overridden.
- Components that exist in the destination environment and are set to be replaced are replaced or overridden.
- Components that did not exist in the destination environment are created.

For more information, see [Replace in Destination Column \(Import and Export\)](#).

If you are importing the **Primavera Unifier Accelerator** package, review the following guidelines:

- The instructions assume that Unifier version 23.12 or later is already installed and configured in your environment.
- The package is intended as a starting point for your configuration. It is installed after an environment is first provisioned to reduce the potential for conflicts that might occur if a package is added in the future. The package is *not* designed as an add-on package. Attempting to import Unifier Accelerator to an environment with an existing configuration is likely to fail due to conflicts with the existing configuration in the environment.
- The package that Oracle provides includes a single instance shell and shell templates with US Dollar set as the default currency. If the source and destination are set to use same base currency, the import will proceed without any currency options. If they are different, the system prompts you to specify the currency for the single instance shell and shell templates.

- The Unifier Accelerator and the Unifier Facilities and Asset Management configuration package cannot be imported to the same Unifier environment without introducing conflicts.
- The Unifier Accelerator and the Unifier Project Controls 23.x and later configuration package cannot be imported to the same Unifier environment without introducing conflicts.
- To download the configuration package, see the [Readme](#).
- For more information, go to [My Oracle Support \(MOS\)](#) and see Doc ID [2428356.1](#).

To import Configuration Packages:

1. To activate the Configuration Package Import wizard, select **Import**.
2. Select a valid ZIP file, and select **Next**.
At the **Package Details** step, the system displays the package components from the selected zip file.

Only the components available in the zip file are displayed in the Package Details preview.

Example

If the user selected a zip file (with categories Designs, Analytics, and Configuration), the Package Components preview displays the following Categories:

- Designs
- Configuration
- Analytics

Because the configuration includes component Business Process, Business Process components are displayed under Configuration.

The Designs node will also have separate sub-node Published Designs to show the published designs coming in as part of the configuration file. The Group sub-node will also appear in the categories Shell Templates and Single Instance Shells. For Groups, the column that will be seen is the Name where the group name should be seen.

There will be a filter option available that lets you filter data for search for every column. The print option prints the consolidated report based on the user selected components.

In the Package Details preview, the After Import Status column is displayed for all the components with the following indicators:

- **Add:** When imported successfully, the component will be added in the destination environment.
 - **Update:** When imported successfully, the component will be updated in the destination environment.
 - **No Change:** When imported successfully, there will be no changes applied to the component in the destination environment.
3. If the package contains new **Shell Templates** or **Single Instance Shells** and you do *not* want the new shell template or single-instance shell to use the destination's Base Currency, deselect the checkbox in the **Replace Shell Currency in Destination** column. For example, if the destination's Base Currency uses United States Dollar (USD) and a new Shell Template uses Euro (EUR), deselect the checkbox to ensure that the template retains the EUR for the currency setting.
 4. If you want to compare components, such as BP design in the new package to those currently deployed in the destination environment, from the toolbar, select **Compare With Previous Version**.
The After Import Status column is displayed for the applicable components, such as BP designs, with the following indicators:

- **Added:** The component does not exist in the current environment and will be added if the import is successful.
 - **Updated:** The component exists in the current environment and will be modified if the import is successful.
 - **No Change:** The component exists in the current environment and in the package, but there will be no changes applied to the component in the destination environment.
5. When you are ready, select **Next** in the **Package Components** step to go to the **User Mapping** step.
 6. If the package contains new **Shell Templates** or **Single Instance Shells**, select **Yes** to acknowledge that you cannot change the default shell currency.
When you reach the User Mapping step, the system extracts the following information:
 - Shell administrator.
 - Auto Creator for Business Process records or line items.
 - BP Auto Creator in the BP Setup.
 - For other component where users/groups are assigned, for example, Workflow Setup, Access Control, column restrictions in Cost Sheet, or Portfolio Manager:
 - If all assignees are Groups, the Groups will be extracted.
 - If the assignees are a mix of users and groups, only the groups will be extracted and the users will be ignored.
 - (Portfolio Manager) If the assignees is a list of users only, during error check, the system displays an error message instructing you to include at least one group.
 - The other creator users for components that the user does not select or cannot be changed, for example, creator of Cost sheet, then those creator users are replaced with the user who is performing the import.
 - When performing import for the first time in the destination environment, by default, the destination login name (present in the destination environment) is displayed in the column for users who *are present* in the environment. The destination login name will be empty for users who *are not present* in the environment.
 - The last entered values for the User Mapping (from the last import) will be remembered in the same environment. The system auto-populates the last User Mapping values after the user reaches the User Mapping step.
 - You can enter the mapping details.
 - You can edit the destination login name for any value.
 - You can map different imported users to the same user in the destination environment.

Note

Although group name and the group permission are available, the members of the group cannot be extracted.

7. When you are done with the **User Mapping** step, select **Next** to go to the **Import** step.
8. In the **Import** step, select or deselect the option to download the impact analysis report. If you deselect this option, you can download the impact analysis report later using the *gear menu* (⚙) in the Configuration Package log.

9. If applicable, select the **Do you want to create a Component List associated to the package** option.
10. When you are ready to import the configuration package, select **Import**.

Note

If you selected the **Do you want to create a Component List associated to the package** option, the list might not appear in the **Component Lists** window immediately after the configuration package is imported. However, you can right-click the **Component Lists** functional node and select **Reload** to view the list.

Configuration Package Report and Audit Log

You can view the configuration package contents in a report format by generating a PDF file. The print option is displayed when you are viewing the configuration package.

After you import a configuration package, all included modules that support auditing will continue to do so. The following lists the specifics:

- Auditing is done post import and in the destination environment.
- New attributes are not added to the Audit log.
- The Date.
- The User Name is the user who last imported the configuration package.

Conditions for User Mapping in Configuration Package

User Mapping

Many Unifier modules have user information as a part of setup information. When you create and export configuration package, the user information is included in the package; however, when you export, the user information will not be created in the **Production** environment and the import process will fail.

To prevent this, you can map the **Development/Test** environment users to a user in the **Production** environment.

Note the following conditions:

- The user mapping that you set at this point applies to the particular configuration package that you are working with.
- The names that you enter in the **Destination Login Name** field (Production) must exist in the destination environment.
- The system validates the user names at the time of import.
- If no user exists by that name, the import fails.
- The **Destination Login Name** is a text field and the system validates the character length against the existing character length limit for the field.
- You cannot map a two-source user to the same destination user.

Configuration Packages Import Rules

The following explains import rules for the configuration packages.

Manually, a design object such as a business process can be set up in a Shell template, Single Instance Shell, Company Workspace only if the design object has an Active Configuration, which is set in the Configuration node.

Because the system does not perform checks for the existence of an Active status configuration at the time of import, the configuration setup is imported irrespective of configuration status (Active or Inactive). As a result, the user must tag the configuration of the corresponding design, in the **Development/Test** environment, so that it is a part of the Configuration Package.

This rule applies to the following components:

- Business Process
- Planning Manager
- Portfolio Manager
- Shell Manager
- Space Manager
- Configurable Manager

The system imports all content included in the Configuration Package.

The system aborts the import process if there is an error.

For a successful import, you must load all necessary modules, for each component, in the destination server. For example, if the configuration package includes Cash Flow Curves, the Cash Flow module must be loaded in the **Production** environment, or destination server.

If the following objects do not exist in the **Production** environment, or destination server, the system creates these objects in the **Production** environment, or destination server, automatically:

- Design
- Data structure setup components
- Shell templates

If a report does not exist in the **Production** environment, or destination server, the system creates the report after a successful import.

If the configuration package components exist in the **Production** environment, or destination server, the system performs an update upon a successful import.

System updates result in complete replacement. For example, if the Auto Creation setup has changed in the BP setup, the system applies the updates to all the tabs in the BP setup.

If you include Oracle Analytics Server reports in your configuration package, ensure that:

- The application modules have been deployed in the imported environment, prior to import.
- The Oracle Analytics Server reports are at application level.
If the application modules have not been deployed in the imported environment prior to import, the import process will fail.

Unifier module options that have associated files are always based on the Configuration Package.

The components for the following objects in the Configuration Package overwrite the components of the corresponding objects in the **Production** environment, or destination server, after a successful import:

- Shell templates
- Templates
- Company Workspace
- Single Instance Shells

If the components of the objects do not exist in the **Production** environment, or destination server, the system adds the components of the objects in the **Production** environment, or destination server, after a successful import.

If the components of the objects exist in the **Production** environment, or destination server, the system updates the components of the corresponding objects in the **Production** environment, or destination server, after a successful import.

When the User Mode Navigator setup is included in the Configuration Package, the system deploys the setup after a successful import.

If external Custom Reports are used in the User Mode Navigator, ensure that the external Custom Reports names and locations in the Configuration Package match those existing in the **Production** environment, or destination server. Otherwise, the import process will fail.

If the names of the following components of Cost Manager sheets (Funding), in a Template, do not match, the import process will fail:

- Funding Sheets
- Commitment Funding Sheets

The registry name of Data Views that are imported into the **Production** environment, or destination server, must match those in the Configuration Package. Data Views can only be imported between two servers belonging to the same registry. This condition also applies to the following components, which use Data Views:

- Data Cubes
- UDRs
- Oracle Analytics Server reports

Impact Analysis Report

The impact analysis report enables the user to view the impact of component after the import has been completed, whether successfully or not.

An Impact Analysis Report contains the following information:

- Import Date
- Imported by
- Import Status

In case of Success, Error, or Failed conditions, the components that will be seen in the report are the ones that impacted the destination system. For example, if there are no changes related to Shell Templates, the shell template information will not be seen the report. The

sequence for information seen will be same as seen in the component list screen (the left-navigation tree).

The **Status** column of the report states the impact on the respective component as follows:

- **Added**
When imported, the component has been added in the destination environment.
- **Updated**
When imported, the component has been updated in the destination environment.
- **No Change**
When imported, no changes are applied to the component in the destination environment.

Viewing Configuration Packages

When you open a configuration package with **Draft** status, the system displays the wizard for the **Package Details** step.

When you view a successfully created/imported configuration package, only the components and categories are displayed that are a part of the configuration package contents.

Example

If the user successfully created a configuration package using List 1 (with categories Designs and Analytics) and List 2 (with categories Designs and Configuration and Configuration included business processes, only), the following is displayed in the package components Categories:

- Designs
- Configuration
- Analytics

Since the configuration included the component business process, the business process components are displayed under Configuration.

The Designs node has a separate tab for the published designs that are a part of the configuration file. The Group sub-node appears in the categories Shell Templates and Single Instance Shells. For Groups, the Name column is displayed (group name).

In case of warnings, the **Errors/Warnings** step is displayed next to the **Package Components** step, listing the warnings contained in the configuration package.

In case of configuration package in Error status, when you open the configuration package, all the errors, or warnings, related to the configuration package, are displayed in the **Errors/Warnings** step.

Transferring Configuration Package

The following is a workflow for transferring your configuration package from one environment to another.

Oracle recommends that you follow this workflow: **Development** transfer to **Test** and **Development** transfer to **Production**.

Development

All the designs, configurations, setups, and any components needed to be transferred to other environment must be done in the Development environment.

After all the components are ready, create the component list which creates the configuration package. The publish for production is optional, based on where you want to transfer the configuration package.

Test

The Test environment can import published and unpublished configuration packages.

After the configuration package is transferred to the Test environment successfully, you must test all the components of the system that have been impacted by the configuration package.

Any changes made (for example, setup or configuration) in the Test environment must be made, manually, in the Development environment before transferring the configuration package to the Production environment.

Production

Only the published configuration packages that have been tested thoroughly (in both Development and Test) must be transferred to the Production environment.

Comparing Configuration Packages and Viewing Design References

If you have the required permissions, you can perform the following additional tasks in the Configuration Packages node.

- Compare two configuration packages that have been successfully created and imported.
- Compare a business process (BP) design to the version that was last deployed. You can complete this task during the import or export of a configuration package. Reviewing the differences can affect whether you continue the process or make additional changes.
- View the BP Design References within a configuration package, before or after you deploy it.
- During an import, compare BP designs included in the configuration package to the most recent versions deployed in the environment. For more information, see [Importing Configuration Packages](#).

To compare packages:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Configuration Packages**.
3. In the **Configuration Packages** log, select the two packages that you want to compare. The packages that you select must have a Status of Created or Import Success.
4. From the toolbar, select **Compare Packages**.
The **Comparing Packages: <selected packages>** page lists the differences in the **Compare Status** column. For example, the column might indicate that a specific BP is only included in one of the packages. If there are no identifiable differences, the Compare Status identifies them as Comparable or Equal.

You can use the Collapse and Expand options in the toolbar to collapse or expand the list of modules, and you can use the Find on Page option to search for a specific module, BP, sheet, and so on.

5. When you are done, click  to dismiss the page.

To compare BP designs:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Configuration Packages**.
3. In the **Configuration Packages** log, select the two packages that contain the BPs you want to compare.
The packages that you select must have a Status of Created or Import Success.
4. From the toolbar, select **Compare Packages**.
5. In the **Comparing Packages: <selected packages>** page, select the applicable BP and select **Compare Selected Business Process** in the toolbar.
The **Comparing Company Configuration Design from Packages: <selected packages>** page lists the differences and uses color coding to differentiate between items that are Modified, Added, and Deleted.

You can use the options in the Filter to display all modifications or to display only specific changes.

- **All:** Displays all differences.
 - **Modified:** Displays the data that has been modified in the second package.
 - **Added:** Displays the data that has been added to the second package.
 - **Deleted:** Displays the data that has been removed from second package.
6. When you are done, click  to dismiss the page and return to the **Comparing Packages: <selected packages>** page.

To view design references:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Configuration Package Management**, and then select **Configuration Packages**.
3. In the **Configuration Packages** log, select the applicable package.
The package that you select must have a Status of Created or Import Success.
4. From the toolbar, select **View Design References**.
The **Design References in <selected package>** page provides detailed information, which you can filter and sort by using the Designs filter and select the applicable tab.
5. When you are done, click  to dismiss the page.

Installing Configuration Packages (On Premises Only)

Unifier lets you install the Facilities and Asset Management (FAM) configuration package if you have access to the feature. For more information, see [Importing Configuration Packages](#).

- For the **Development** environment: You have the option to install FAM. The uDesigner is empty, which lets you create your own designs. In the Development environment, you need to create configuration packages, and set them as published before you can use them (transferring, designing, configuring, and setting up) in the **Production** environment.

Note

Oracle recommends that you follow this workflow: **Development** transfer to **Test** and **Development** transfer to **Production**.

- For the **Test** environment: You have the option to install FAM. The uDesigner is empty, which lets you create your own designs. In the Test environment, you need to create configuration packages, and set them as published before you can use them (transferring, designing, configuring, and setting up) in the **Production** environment.
- For the **Production** environment: You can install FAM by using a configuration package.

Administer Visualizations From the Company Workspace

[Video: Setup Unifier Visualizations in Admin Mode](#)

Visualizations are an approach to render data in a graphical or pictorial format to help identify and understand underlying trends and nuances of the data in an intuitive manner. In Unifier, you can use visualizations to represent and identify trends in business processes (BPs), cash flows, and cost breakdown structure (CBS) cost sheets to develop actionable insights that enable you to drive business decisions for your organization. Visualizations provide pictorial representations of the underlying data from specific BPs, cash flows, CBS cost sheets, and data views such as KPIs, metrics, and charts.

Company Administrators manage visualizations at two levels:

- **Manage data sources for visualizations**
The data source selected for creating visualizations determines the information that can be presented and published. Each data source can cater to specific needs of an organization. Administrators assigned to manage data sources are responsible for determining the information to be included in each data source.
- **Manage visualization content**
After data sources are created, administrators are responsible for determining the content that can be made available from one or more data sources to users and groups for creating, modifying, or viewing visualizations.

Company Administrators can:

- Set up individual users and groups with specific roles and permissions to access and manage different aspects of rendering visualizations.
- Manage data sources and published data views to identify and select the BP, cash flow, and CBS cost sheet data that can be used for creating visualizations at the company level, in project/shell templates, and in projects/shells. See:
 - [Manage Data Sources](#)
 - [Manage Visualizations in Project/Shell Templates](#)
- [Manage Visualization Content](#) you provide to other administration users for creating, modifying, or viewing visualizations

About This Content

This guide explains how to use Unifier to administer visualizations in the Company Workspace tab, project/shell templates, and projects/shells.

Audience

Company Administrators, Project/Shell Administrators, and administrators in similar capacities should review this information.

Supported Sources for Visualizations

The following types of data sources can be used for visualizations:

- Standard data sources
 - Line item business processes (BPs) (Generic)
 - Cash Flow
 - CBS Cost Sheet
 - Cost BPs (Line item with CBS Codes)
 - * Generic
 - * Base Commit
 - * Transfer (CBS Cost Codes)
 - * Change Commit
 - * General Spends
 - * Payment Applications
 - * Shell level Simple BPs
 - * Shell information if you want to select single record BPs
- Custom data sources
These include published data views (shell level). For more information, see [Creating Data Views](#).

Manage Data Sources

All data sources for visualizations are created and managed from the Data Sources log. The Data Sources log is the central repository for all data sources and published data views which can be used for visualizations.

As a Company Administrator, you can:

- Set up permissions for users and groups to administer or view data sources. See [Enable Permissions to Administer or View Data Sources in the Company Workspace](#)
- [Enable View Permission For Visualizations in User Mode](#)
- [Create Data Sources](#)
- [Modify Data Sources](#)
- [Duplicate Data Sources](#)
- [Publish Data Sources](#)
- [Delete Data Sources](#)
- [View and Export the Data Source Audit Log](#)

Types of Data Source Users

Company Administrators can create two types of users and groups that can access data sources:

- Data Source Administrators
- Data Source Viewers

Data Source Administrators

Users designated as Data Source Administrators are assigned the Configure permission to configure one or more data sources they have been given access to. These users can perform tasks such as:

- [Create Data Sources](#)
- [View and Export the Data Source Audit Log](#)
- [Duplicate Data Sources](#)
- [Publish Data Sources](#)
- [Delete Data Sources](#)
- [Restore Data Sources to the Last Published Version](#)
- [View and Export the Data Source Audit Log](#)

Data Source Viewers

Users designated as Data Source Viewers are assigned the View permission to one or more data sources they have been given access to. These users can:

- [Access the Data Sources Log in the Company Workspace](#) to only view the data sources they have access to
- [View and Export the Data Source Audit Log](#)

For more information on how to set up these permissions for each user and group category described above, see:

- [Enable Permissions to Administer or View Data Sources in the Company Workspace](#)
- [Enable View Permission For Visualizations in User Mode](#)

Enable Permissions to Administer or View Data Sources in the Company Workspace

To administer visualizations, Company Administrators must be able to access the Visualizations node in the left Navigator from the Company Workspace tab in the Admin mode. Completing this task displays the Visualizations sub-node under the Setup node in the left Navigator. As a Company Administrator, you can set up this permission for yourself as well as for any other users/groups you select as additional Company Administrators.

To set permissions that will enable access to the Visualizations node in the left Navigator in the Company Workspace tab:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **User Administration**, and then select **Access Control**.

4. In the **Access Control** log (right pane), expand **Administration Mode Access**, select the **Visualizations** node, and then select the **Data Sources** sub-node.
5. In the **Permissions Settings for: Data Sources** dialog box, select **Add**.
 - a. In the **Select User/Groups** block, (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window, select yourself and any other users/groups you want to add as Data Source Administrators or Data Source Viewers for visualizations.
 - ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block (lower block), select the following permissions for each user/group selected in the upper block (step 5a):
 - **Configure**: Select this permission to give users/groups to administer data sources from the **Visualizations** node in left Navigator in the **Admin** mode.
 - **View**: Select this permission to give users/groups view-only access to data sources from the **Visualizations** node in left Navigator in the **Admin** mode.
 - c. Select **OK**.
6. Select **OK**.

Enable View Permission For Visualizations in User Mode

Company Administrators can set up view permission to access visualizations for users and groups in the User mode.

To set view permissions to access visualizations in the User mode:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **User Administration**, and then select **Access Control**.
4. In the **Access Control** log (right pane), expand **User Mode Access** and select the **Visualizations** node.
5. In the **Permissions Settings for: Visualizations** dialog box, select **Add**.
 - a. In the **Select User/Groups** block, (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window, select users and groups to give view permission for visualizations.
 - ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block, (lower block), select the **View** permission for each user/group selected in the upper block (step 5a), and select **OK**.
6. Select **OK**.

Access the Data Sources Log in the Company Workspace

The Data Sources log can be regarded as the Home page for managing all data sources created for data visualizations in Unifier. It displays a list of data sources with the metadata of each data source.

You must have either Configure or View permissions for Data Source node in the Company Workspace.

To access the Data Sources log in the Company Workspace:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
 - **Status**: Current status of the data source. Valid statuses include: **Draft**, **Published**, and **Published and edited**.
 - **Name**: Name of the data source.
 - **Description**: Optional description of the data source.
 - **Data Type**: Data type of the data source. Valid choices include [Supported Sources for Visualizations](#).
 - **Last Modified**: The recent date that the data source was modified.
 - **Modified By**: The name of the user who modified the data source.
 - **Last Published**: The recent date that the data source was published
 - **Usage**: Indicates whether the data source is **Used** or **Not Used** for data visualizations.
 - **Audit Log**: Select **Audit Log** (🔍) to view the actions taken in each data source. See [View and Export the Data Source Audit Log](#).
4. (Optional) To focus on a subset of data sources displayed in the log (step 3), select any of the following filters:
 - **Status**: Select this filter to focus on data sources with the following statuses:
 - **Draft**: Indicates the data source has not been made available for data visualizations.
 - **Published**: Indicates the data source is available for data visualizations.
 - **Published and edited**: Indicates the data source was previously published and subsequently updated.
 - **Data Type**: Select this filter to focus on data sources with a specific data type such as a business process (BP), cash flow, CBS cost sheet, meeting minutes, action items, contract.
 - **Data Source**: Select this filter to focus on a specific data source such as an RFI data source.
 - **Last Modified**: Select this filter and enter a date range to select only those data sources that were last modified in the selected dates.
 - **Last Published**: Select this filter and enter a date range to select only those data sources that were last published in the selected dates.
 - **Usage**: Select this filter to focus only those data sources whose **Usage** status indicates **Used** or **Not Used** in the content library.

In the **Data Sources** log, Company Administrators can perform the following tasks:

- [Create Data Sources](#)
- [Modify Data Sources](#)
- [Duplicate Data Sources](#)

- [Publish Data Sources](#)
- [Delete Data Sources](#)
- [Restore Data Sources to the Last Published Version](#)

Keyboard Navigation

You can use your computer keyboard to navigate through the application. Use the following keyboard shortcuts to access frequently used or important functionality. Note that keyboard shortcuts may change depending on your selected browser, and disabled buttons/fields are skipped.

Guided Process Overview Page

Action	Windows Shortcut Key	Mac Shortcut Key
Move through elements on the page	Press Tab	Press Tab
Select a current focus element	Press Enter	Press Enter

Guided Process Step Page

Action	Windows Shortcut Key	Mac Shortcut
Move through elements on the page	Tab	Tab
Select a current focus element on the Step page	Enter	Enter
Move the focus between the elements in the footer toolbar (left)	<	<
Move the focus between the elements in the footer toolbar (right)	>	>
Move up	^	^
Move down	⌵	⌵

Create Data Sources

Company administrators are the first group of users who determine the data sources that can be made available to users for creating visualizations. You must have Configure permission to create data sources for visualizations.

To create data sources for data visualizations:

1. Sign into Unifier with Administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane), select **Create**.
5. Complete the [Data Source Creation Guided Process](#).

Note

- Required fields are indicated in the user interface.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.

Data Source Creation Guided Process

The Data Source Creation guided process provides a step-sequence for you to create data sources for data visualizations.

It includes the following sequence:

1. [Properties: Specify Metadata for the Data Source](#)
2. [Data Elements: Select Data Elements for the Data Source](#)
3. [Calculated Elements: \(Optional\) Include Calculated Elements in the Data Source](#)
4. [Filters: \(Optional\) Create Filters for Data Elements](#)
5. [Preview: Created Data Source](#)

You must have Configure permission for visualization data sources to complete this task.

Properties: Specify Metadata for the Data Source

When you select Create in the Data Sources log, the Properties step of the Data Source Creation guided process displays.

Enter the following information about the data source being created:

1. In the **Name** field, enter a user-friendly name for the data source with a maximum length of 64 characters.
2. In the **Description** field, specify the purpose of the data source with a maximum length of 4000 characters.
3. From the **Data Type** list, select **Cash Flow** or **CBS Cost Sheet**, or the following business processes (BP) from the list .
 - Line Item BPs (workflow and non-workflow)
 - Cash Flow
 - CBS Cost Sheet
 - For Cash Flow *and* CBS Cost Sheet, the following sources are available:
 - CBS Cost Sheet
 - CBS Cost Sheet in Default Currency
 - CBS Cost Sheet in Base Currency
 - CBS Cost Sheet in Default Currency/CBS Attributes
 - CBS Attributes
 - Shell
 - Shell/CBS Cost Summary in Base Currency

- Shell/CBS Cost Summary in Default Currency
- Snapshots
- Snapshots/CBS Cost Sheet in Base Currency
- Snapshots/CBS Cost Sheet in Default Currency
- Snapshots/Shell CBS Cost Sheet in Default Currency/CBS Attributes
- Snapshots/CBS attributes
- Shell
- Shell/[shell type]
- Shell/All single record BPs
- Shell/All single record BPs/All pickers in Single Record BPs (such as User Picker, User Data Picker, Shell Data Picker, BP Picker, BP Data Picker, and so on)
- Cost BPs (Line items with CBS Codes) with the following classifications:
 - Generic
 - Base Commit
 - Transfer (CBS Cost Codes)
 - Change Commit
 - General Spends
 - Payment Applications
- Shell level Simple BPs
- Shell Information if you want to select a Single Record BPs
- Shell-level published data views
See [Creating Data Views](#).

When Cost BPs are selected as the data type, sources such as Upper Forms, line items, CBS Attributes, Shell, Company, Attachments, CBS Code related sources like Cost Sheet in Shell currency, and CBS code-related sources like Cost Sheet in Base currency display in the list.

4. Select the **Enable Caching** toggle to disable or enable caching for performance improvement.

Caching can only be enabled if you selected a **Line Item Business Process**, **Simple Business Process (Shell)**, **Shell Information**, **Cash Flow**, or **CBS Cost Sheet** in the previous step. See [How Data Caching Works in Unifier](#).

5. From the **Save** menu, select any of the following options:
 - Select **Save** to save the entered information.
 - Select **Save and Close** to return to the **Data Sources** log.
6. Select **Continue** to proceed to [Data Elements: Select Data Elements for the Data Source](#).
 - You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
 - It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
 - You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.

- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.

Data Elements: Select Data Elements for the Data Source

In the Data Elements step of the Data Source Creation guided process, you can finalize the list of data elements being included in this data source. For a detailed list of sources used to elicit a list of data elements, see [Supported Data Element Sources for Business Processes](#).

You can:

- [Add Data Elements From Other Data Sources](#)
- Remove current data elements (see below)
- Rename labels of data elements (see below)

To remove or rename current data elements:

1. In the **Search** bar, enter any of the following information to look up a data element:
 - **Name:** Enter the name of the data element. For example, enter **uuu_creation_date**.
 - **Label:** Enter the display label used for the data element in Unifier. For example, enter **Creation Date**.
 - **Type:** Enter the data type of the data element. For example, enter **Integer**, **String**.
2. In the displayed **Search Results**, select the checkbox for a data element and then select any of the following actions:
 - **Edit** (): Select to rename the label of a data element. All data elements must have unique labels in a data source. Rename any duplicate labels for data elements.
 - **Remove** to remove selected data elements from the data source.
3. From the **Save** menu, select any of the following options:
 - **Save:** Select to save the entered information.
 - **Save and Close:** Select to return to the **Data Sources** log.
 - **Properties:** Select to revert to the previous step.
4. Select **Continue** to proceed to the next task, [Calculated Elements: \(Optional\) Include Calculated Elements in the Data Source](#).

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.

Add Data Elements From Other Data Sources

You can add data elements from one or more data sources.

To add data elements from other data sources:

1. Select **Add** in the **Data Elements** step of the **Data Source Creation** guided process.
2. In the **Add Data Element** drawer, enter the following information:
 - a. From the **Source** list, select a data source to locate the data element to be included. The Source list includes all the sources available for the selected data type. For example, select **Document Approval / Upper Form**.
 - b. In the **Type to Filter Search** bar, enter the first few letters of the data element you want to add. It will further filter the data elements displayed from the data source selected in the previous step.
 - c. From the filtered **Search Results** list, select the checkbox corresponding to each data element for inclusion in the data source.
 - d. From the **Add** menu, select any of the following options:
 - **Add and Add More**: Select to repeat step 2 and continue adding data elements in this drawer.
 - **Add and Close**: Select to add the data elements and return to the **Data Elements** step of the guided process.
3. In the **Data Elements** step of the guided process, perform the following actions:
 - a. From the **Save** menu, select any of the following options to save the selected data elements:
 - **Save**: Select to save the selected information displayed in the **Data Elements** step.
 - **Save and Close**: Select to return to the **Data Sources** log.
 - b. Select **Continue** to proceed to the [Calculated Elements: \(Optional\) Include Calculated Elements in the Data Source](#).

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.

Calculated Elements: (Optional) Include Calculated Elements in the Data Source

In the Calculated Elements step of the Data Source Creation guided process, finalize the calculated elements to include in the data source being created.

You can:

- Select **Create** to [Create Calculated Elements](#).
- Select **Delete** to delete calculated elements as outlined below.

To delete a calculated element currently included in *this* data source:

1. In the **Search** bar, enter any of the following information:
 - **Name:** Enter the name of the calculated element. For example, enter **ue_ibu_DocID**.
 - **Label:** Enter the display label used for the calculated element. For example, enter **Document ID**.
 - **Type:** Enter the data type of the calculated element. For example, enter **Integer**, **String**.
2. In the **Search Results** list, select the checkbox for a calculated element, and select **Delete**.

To select *all* calculated elements displayed in the search results, select the checkbox for the total number of items displayed in the search results. For example, if 9 items are displayed in the search results, then select the checkbox for **9 items**.
3. From the **Save** menu, select any of the following options:
 - **Save:** Select to save the entered information.
 - **Save and Close:** Select to return to the **Data Sources** log.
 - **Properties** or **Data Elements:** Select either to revert to the previous steps of the guided process
4. Select **Continue** to proceed to [Filters: \(Optional\) Create Filters for Data Elements](#) step of the guided process.

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.
- Resolve any errors displayed for calculated elements.

Create Calculated Elements

To add calculated elements to the data source being created:

1. Select **Create** in the **Calculated Elements** step of the **Data Source Creation** guided process.
2. In the **Create Calculated Element** drawer, enter the following information:
 - a. In the **Label** field, enter a name for the calculated data element; maximum length 60 characters. It must be unique for the entire data source, including the data elements added in the previous step. For example, enter **Vendor Document ID**.
 - b. In the **Name** field, enter an actual name for the calculated data element; maximum length 60 characters. For example, enter **ue_ibu_DocID**.
 - c. From the **Type** list, select the data type of the data element. Choices include: **String**, **Integer**, **Double**, **Date**, and **Boolean**. For example, select **Integer**.
 - d. In the **Formula** field, enter the formula to be used for the data element. You can use current calculated data elements and supported functions.

As you begin to enter the formula, you can:

- Select a function from the list that displays based on the entered formula.
 - Hover over a function to view a description and an example of the function.
- e. Select the **Learn more about functions** link to view the syntax and functions supported for creating your formula. See [Supported Functions for Calculated Elements](#).
 - f. Select any of the options to create, test, or discard the created formula:
 - **Available Elements** ( - **Create and Create Another**: Select if you want to repeat step 2 to continue creating calculated elements in this drawer.
 - **Create and Close**: Select to close this pane and return to the [Calculated Elements: \(Optional\) Include Calculated Elements in the Data Source](#).
3. In the **Calculated Elements** step of the guided process, perform the following actions:
 - a. From the **Save** menu, select any of the following options to save the selected data elements:
 - **Save**: Select to save the selected information displayed in the **Data Elements** step.

- **Save and Close:** Select to return to the **Data Sources** log.
- b. Select **Continue** to proceed to the [Filters: \(Optional\) Create Filters for Data Elements](#) step of the guided process.

Delete Calculated Elements

In the Calculated Elements step of the Data Source Creation guided process, you can also delete any current or previously added calculated element in *this* data source.

To delete a current or previously-added calculated element in *this* data source:

1. In the **Search** bar, enter any of the following information:
 - **Name:** Enter the name of the calculated element. For example, enter **ue_ibu_DocID**.
 - **Label:** Enter the display label used for the calculated element. For example, enter **Document ID**.
 - **Type:** Enter the data type of the calculated element. For example, enter **Integer**, **String**.
2. In the **Search Results** list, select the checkbox for a calculated element, and select **Delete**.

To select *all* calculated elements displayed in the search results, select the checkbox for the total number of items displayed in the search results. For example, if 9 items are displayed in the search results, then select checkbox for **9 items**.
3. From the **Save** menu, select any of the following options:
 - **Save:** Select to save the entered information.
 - **Save and Close:** Select to return to the **Data Sources** log.
 - **Properties** or **Data Elements:** Select to revert to the previous steps of the guided process.
4. Select **Continue** to proceed to [Filters: \(Optional\) Create Filters for Data Elements](#) of the guided process.

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.
- Resolve any errors displayed for calculated elements.

Filters: (Optional) Create Filters for Data Elements

You can set up filters to display only those data elements that meet the filter criteria in the data source being created. For example, you can create a filter to display only those records with an Open Issue Status.

Note

This step is optional. You can select **Skip** to move to [Preview: Created Data Source](#) of the guided process.

To create a filter on a data element:

1. Select **Add Condition (+)** in the **Filters** step of the **Data Source Creation** guided process.
2. From the **Condition** list, select one of the following:
 - **All:** Select this option to specify an AND condition to ensure all filter conditions are met for the filter being defined.
 - **Any:** Select this option to specify an OR condition to ensure any one condition is met for the filter being defined.
3. For each condition, select a **Data Element**, **Condition**, and **Value** as follows:
 - a. From the **Data Element** list, select a data element that was added to this data source in [Data Elements: Select Data Elements for the Data Source](#). For example, select **Creation Date** from the list.
 - b. In the **Condition** field, enter a condition or select a condition from the **Condition** list that the data element (selected in the previous step) must satisfy. For example, **Creation Date**, selected in the previous step, is of **Date** data type.
For more information on the list of conditions supported for each data type, see [Supported Conditions for Data Types](#).
 - c. In the **Value** field, enter a value or a range of values the condition must satisfy.

Note

The format of the **Value** fields depends on the type of values that can be entered or selected. It can be a text field, a list, or a combination of text and list fields.

4. (Optional) Select any of the following actions:
 - **Add Condition (+):** Select to specify more than one condition for the filter. Repeat step 3.
 - **Remove Conditions** (Preview: Created Data Source of the guided process.

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.
- The file size of blank files display as zero (0), but in the database it is a null. Therefore, filtering on fields such as File Size won't retrieve any records as the database does not store the zero value.

Preview: Created Data Source

The Preview step is the last step of the guided process. You can preview all the data elements and calculated elements selections made in the previous steps of the guided process.

To preview the selections made in the data source being created:

1. From the **Preview Project** list, select your project, and then select **Preview Data** to view the first 100 rows of the data source.
2. Select any of the following actions:
3. From the **Save** menu, select any of the following options:
 - Select **Save** to save the selected information in this step.
 - Select **Save and Close** to save the data source in a **Draft** status; return to the **Data Sources** log.
4. Select **Publish** to save the data source in a **Published** status; return to the **Data Sources** log.

Note

- You can click **Cancel** in any step of the guided process to discontinue and return to the **Data Sources** log.
- It is recommended to click **Save** in each step to avoid losing any unsaved information or selections made in that step.
- You may receive an error message during Data Structure setup when you enter a valid Data Structure and a valid Data View. You can disregard the error and proceed with editing and saving the Data Structure.
- If a data source is removed from a BP design or data view, update the data source before you create, view, or update the content based on that data source.

Modify Data Sources

To modify data sources for data visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Name** column of the **Data Sources** log (right pane), select a data source.
5. Navigate through the guided process and update the data source as required.

See the [Data Source Creation Guided Process](#).

The status of data source is updated to reflect the current status as either **Draft**, **Published**, or **Published and edited**.

Duplicate Data Sources

You must have Configure permission for visualization data sources to complete this task.

To duplicate data sources for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane), select the checkbox corresponding to one or more data sources, and then select **Duplicate**.

A duplicate of each data source is created with "Copy1" suffixed to the name of the data source.

Publish Data Sources

You must have Configure permission for visualization data sources to complete this task.

To publish data sources for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane), select the checkbox corresponding to one or more data sources, and then select **Publish**.
5. If the Content Recommendations feature is enabled, when the Content Recommendation page appears, do one of the following:
 - From the **Preview Project** list:
 - a. Select the applicable project.
 - b. Review the recommendations.
 - c. Select the checkbox for the items that you want added to the Content Library.

- To see additional recommendations, select **Generate More Recommendations** at the bottom of the page.
- d. When you are done, select **Save to Content** in the upper-right corner.
- To skip this step, select **Skip** in the upper-right corner. You can return to this step at any time. For more information, see [Update AI-Generated Content Recommendations \(Cloud Only\)](#).

The status of each selected data source displays as **Published**.

Update AI-Generated Content Recommendations (Cloud Only)

[Video: Create AI-Generated Content Recommendations in Admin Mode](#)

When the Content Recommendations feature is enabled, you can review and select content to add to the Content Library after publishing a data source.

You can update content selections both immediately after publishing a data source and at any time for existing published data sources.

You must have Configure permission for visualization data sources *and* content to complete this task.

To view and select content for inclusion in the library:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
3. In the **Data Sources** log, select the checkbox for the one **Published** data source you want to add content from, and then select **Recommend Content**.

Note

You can only select one Published data source at a time.

4. On the **Content Recommendation** page, select the applicable project from **Preview Project**.
You can perform any of the following actions:
 - To view the data for the applicable project, select **Preview Data** (.
 - To maximize the view of a visualization, select it.
 - To view additional information about a visualization, hover over the **Information** () icon or the **Tooltip** () icon.
5. To view more content recommendations, select **Generate More Recommendations** at the bottom of the page.
6. Select the check box for the items that you want to add to the Content Library.
7. When you have finished, select **Save to Content** in the upper-right corner.

Note

This summary was prepared by generative AI. Carefully review and verify it against trusted sources, as it may include out-of-date, inaccurate, or incomplete information.

Delete Data Sources

You can delete draft and published data sources only if they are not used for data visualizations. Their Usage status should indicate Not Used in the Data Sources log.

You must have Configure permission for visualization data sources to complete this task.

To delete one or more data sources for data visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane), select the checkbox corresponding to one or more data source whose **Usage** indicates **Not Used**.
5. From the **More Actions** menu, select **Delete**.
6. In the **Delete Item(s)** confirmation dialog box, select any of the following options:
 - Select **Delete** to delete the data source.
 - Select **Cancel** to discontinue deleting the data source.

Note

Deleted data sources cannot be recovered.

Restore Data Sources to the Last Published Version

You can revert to a previously published version of a data source. This action can only be performed on data sources whose current status is Published and edited.

You must have Configure permission for visualization data sources to complete this task.

To revert to a previous published version of a data source:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane):
 - a. Select the checkbox for a data source whose status is **Published and edited**.
 - b. From the **More Actions** menu, select **Restore to Last Published**.
 - c. In the confirmation dialog box, select **Yes**; otherwise, select **No** to discontinue this task.

Note

Verify the changes have been reverted in the data source.

View and Export the Data Source Audit Log

The audit log is a chronological list of actions performed by all users with access to the data source. Company Administrators can view and export the audit log.

You must have Configure permission for visualization data sources to complete this task.

To view and export the audit log of a data source:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Sources** log (right pane), select **Audit Log** for a data source.
5. In the **Audit Log** drawer, view the following information:
 - **Modified:** Date and time each change was made in the data source. Date and time format is based on the user's preferences.
 - **Action:** Type of change made to the data source. Actions include **Created**, **Published**, **Updated**, and more.
 - **Modified By:** Name of the user who made the change in the data source.
6. To download the audit log as a Microsoft Excel spreadsheet (.xlsx), select **Export** (↓) .

View and Export the Data Source Usage Log

The Usage Log is available for data sources with Used status only. The log displays how the data source is being used by displaying a list of content items that use each data source. Company Administrators can view and export the usage log of each data source.

You must have Configure or View permissions for Data Sources in the Company Workspace to perform this task.

To view and export the usage log of a data source:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Data Sources**.
4. In the **Data Source** log (right pane), in the **Usage** column, select **Used** for the data source.
5. In the **Usage Log** drawer, view the following information:
 - **Content Name:** The name of the content item using the data source.
 - **View Type:** The type of content item created such as a Bar chart, Pie chart, and so on.
6. To download the log as a Microsoft Excel spreadsheet (.xlsx), select **Export** (↓). You must have **Configure** permissions.

Update Draft Data Sources

Update Published Data Sources

Manage Visualization Content

Content for all visualization data sources is created and managed from the Content log in the Company Workspace tabUnifier. The Content log can be regarded as a master repository of various types of content items such as bar charts, pivot grids, and tables that can be used by your users in visualizations across shells.

Company Administrators can:

- Set up permissions for users and groups to administer or view visualization content. See [Enable Permissions to Administer or View Visualizations Content in the Company Workspace](#).
- Create various types of charts, grids, and KPIs in the Content log for visualizations. See [Create or Update Content for Data Visualizations](#).
- Manage upkeep of the content created in the Content log.
- [Publish Content](#) so that content Project/Shell Administrators or users can use customized and AI-generated content in project/shell visualizations.
- [Unpublish Content](#) prevents content from being added to the content library and used by new visualizations until the content items are published. However, this does not impact the existing visualizations that use the unpublished content.
- [Delete Content](#).
- [View and Export the Audit Log of Visualization Contents](#).
- [View and Export the Visualizations Usage Log](#).

Company Administrators with either Configure or View permissions for data sources and content should review this information.

Types of Visualization Content Users

Company Administrators can create two types of users that can work with content from data sources:

- Content Administrators
- Content Viewers

Content refers to the content library of components created using one or more data sources. The content library can be published and made available to other users for creating and publishing visualizations.

In Unifier, these users can access the **Content** node as follows:

1. Go to the **Company Workspace** tab, and switch to **Admin** mode.
2. In the left Navigator, select **Visualizations**, and then select **Content**.

Content Administrators

Users designated as Content Administrators are assigned the Configure permission to configure the content log of one or more data sources that they have been given access to. These users can perform tasks such as:

- [Create or Update Content for Data Visualizations](#)
- [Duplicate Content](#)
- [Publish Content](#)
- [Unpublish Content](#)
- [Delete Content](#)
- [View and Export the Audit Log of Visualization Contents](#)
- [View and Export the Visualizations Usage Log](#)

Content Viewers

Users designated as Content Viewers are assigned the View permission to view the content log that they have been given access to. These users can view information such as:

- [Access the Content Log in the Company Workspace](#) and only view content created for visualizations
- [View and Export the Audit Log of Visualization Contents](#)
- [View and Export the Visualizations Usage Log](#)

For more information on how to set up these permissions for each user/groups category, see [Enable Permissions to Administer or View Visualizations Content in the Company Workspace](#).

Enable Permissions to Administer or View Visualizations Content in the Company Workspace

To administer content, Company Administrators must be able to access the Visualizations node in the left Navigator from the Company Workspace tab in the Admin mode. Completing this task displays the Visualizations sub-node under the Setup node in the left Navigator. As a Company Administrator, you can set up this permission for yourself and for other users and groups you select as additional company administrators.

To set permissions to administer or view content from the Visualizations node in the left Navigator of the Company Workspace tab:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **User Administration**, and then select **Access Control**.
4. In the **Access Control** log (right pane), expand **Administration Mode Access**, select the **Visualizations** node, and then select the **Content** sub-node.
5. In the **Permissions Settings for: Data Sources** dialog box, select **Add**.
 - a. In the **Select User/Groups** block (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window, select yourself and any other users and groups you want to add as Content Administrators or Content Viewers.

- ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block (lower block), select the following permissions for each user/group selected in the upper block (step 5a):
 - **Configure**: Select this permission to administer content from the **Visualizations** node in left Navigator in the **Admin** mode.
 - **View**: Select this permission to view content from the **Visualizations** node in left Navigator in the **Admin** mode.
 - c. Select **OK**.
6. Select **OK**.

Enable Permissions to View Visualization Content in the User Mode

Company Administrators can set up permissions for users and groups to view visualization content in the User mode.

To set permissions that will enable view access to the Visualizations node in the left Navigator in the User mode:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **User Administration**, and then select **Access Control**.
4. In the **Access Control** log (right pane), expand **User Mode Access**, and then select the **Visualizations** node.
5. In the **Permissions Settings for: Visualizations** dialog box, select **Add**.
 - a. In the **Select User/Groups** block (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window, select users and groups to give view-only permission for visualization content.
 - ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block (lower block), select the **View** permission for each user and group selected in the upper block (step 5a), and then select **OK**.
6. Select **OK**.

Access the Content Log in the Company Workspace

The Content log is the repository used for creating and managing the content made available from one or more data sources in the application. The log displays a list of various types of content that can be made available with the metadata of each content item.

Company Administrators must have Configure or View permissions for the Content node in the Company Workspace. For more information on setting these permissions, see *Manage Permissions for Data Visualization Users and Groups*.

To access the Content log in the Company Workspace:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.

4. In the **Content** log (right pane), the following information is displayed as metadata for each content:
 - **Status:** Current status of the content. Valid statuses include:
 - **Draft:** Indicates that the content item cannot be used in visualization pages within shells and shell templates. Project/Shell administrators and users cannot access it.
 - **Published:** Indicates administrators and users can use it in visualization pages. It appears in the content catalog of a shell or shell template.
 - **Name:** Name for the content type. For example, KPI cards called **Revised Budget** and **Original Budget**.
 - **View Type:** The type of content created. The following types can display: **Area Chart**, **Bar Chart**, **Bubble Chart**, **KPI Card**, **Line Chart**, **Pie Chart**, **Pivot Grid**, and **Table**.
 - **Description:** (Optional) A short statement that outlines the purpose of the created content.
 - **Data Source:** Names of data sources that use this content type. For example, the KPI card content type is used in the **Estate View** data source.
 - **Last Modified:** The most recent date that the content type was modified.
 - **Modified By:** The name of the user who modified the content type.
 - **Usage:** Indicates whether the content item is currently used in visualization pages.
 - **Used:** Select this link to view at least one visualization page using the content item. See [View and Export the Visualizations Usage Log](#).
 - **Not Used:** Indicates the content item is not used in visualizations.
 - **Audit Log:** Select **Audit Log** (🔍) to view the actions taken in each data source. See [View and Export the Audit Log of Visualization Contents](#).
5. (Optional) To focus on a subset of content items displayed in the log (step 4), select any of the following filters:
 - **Status:** Select this filter to focus on content in the following statuses:
 - **Draft:** Indicates the content item is currently not available for data visualizations.
 - **Published:** Indicates the content item is available for data visualizations.
 - **Published and edited:** Indicates that a published content item has been subsequently updated.
 - **Data Source:** Select this filter to focus on content items associated with a specific data source. For example, an RFI data source.
 - **Last Modified:** Select this filter and enter a date range to select only those content items that were last modified in the selected dates.
 - **Usage:** Select this filter to focus on only those content items whose **Usage** status indicates either **Used** or **Not Used**.

In the **Content** log, Company Administrators can perform the following tasks:

- [Create or Update Content for Data Visualizations](#)
- [Duplicate Content](#)
- [Publish Content](#)
- [Unpublish Content](#)
- [Delete Content](#)

Keyboard Navigation

You can use your computer keyboard to navigate through the application. Use the following keyboard shortcuts to access frequently used or important functionality. Note that keyboard shortcuts may change depending on your selected browser, and disabled buttons/fields are skipped.

Common Shortcuts

Action	Windows Shortcut Key	Mac Shortcut Key
Move right through elements in a log/page (right pane)	Press Tab	Press Tab
Move left through the elements in a log/page (right pane)	Press Shift+Tab	Press Shift+Tab
Select a current focus element	Press Spacebar or Enter	Press Spacebar or Enter

Content Log

Action	Windows Shortcut Key	Mac Shortcut Key
Scroll through filter values and select/deselect a filter value from the list	Press Tab , and then press Spacebar	
Select a row in the Content log		
Select the Usage Log of a content item		
Select the Audit Log of a content item		

Create or Update Content for Data Visualizations

Company Administrators can create or update various types of content items in the Content log if they have Configure permission for the visualization Content node

[Video](#)

These include:

- [Create or Update Area Charts, Bar Charts, and Line Charts](#)
- [Create or Update Bubble Charts](#)
- [Create or Update Combo Charts](#)
- [Create or Update Pie Charts and Donut Charts](#)
- [Create or Update Funnel Charts](#)
- [Create or Update KPI Cards](#)
- [Create or Update Pivot Grids](#)
- [Create or Update Pyramid Charts](#)
- [Create or Update Scatter Charts](#)
- [Create or Update Tables](#)

- [Create or Update Timeline Charts](#)

Create or Update Area Charts, Bar Charts, and Line Charts

To create Area Charts, Bar Charts, and Line Charts for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Area Chart**, **Bar Chart**, or **Line Chart**.
 - c. In the **Name** field, enter a name for the chart.
 - d. (Optional) In the **Description** field, enter a short description about the chart.
 - e. From the **Value** list, select a data element from the data source selected in step 5b. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
 - **Count:** (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage:** A percent of the filtered value from the total of the selected data element.
 - **Sum:** Sum of all values of the selected data element.
- f. After populating the required fields for a Bar chart, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

- g. (Optional) From the **Color By** list, select a non-numeric data element to differentiate using a color-code. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.

- h. From the **Category** list, select a non-numeric data element that you can use as a category to differentiate the bars in the chart. Perform any of the following actions:
 - To select a data element for the category, select **Add Category**.
 - To remove a category and the associated data element, select **Delete (x)**.
 - If you have selected more than one category, select **Drag (=)** to reorder the categories.
- i. From the **Data Labels** list, select the location for displaying labels on the chart.
Common options are:
 - **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of an Area chart, Bar chart, or Line chart.
 - **None**: The data labels do not display in the chart.For Area charts and Line charts, the following additional options display:
 - **Above Marker**: The data label displays above the marker point.
 - **Below Marker**: The data label displays below the marker point.
 - **Before Marker**: The data label displays before the marker point.
 - **After Marker**: The data label displays after the marker point.For Bar charts, the following additional options display:
 - **Inside Bar Edge**: The data label displays on the inside edge in a Bar chart.
 - **Outside Bar Edge**: The data label displays on the outside edge in a Bar chart.
- j. From the **Orientation** list, select the orientation as either **Horizontal** or **Vertical** (default).
- k. In the **Stacked** field, toggle to show or hide a stacked Bar chart.
- l. In the **Show Category Axis Title** field, toggle to show or hide the label of the data element selected for the X-axis .
- m. In the **Show Value Axis Title** field, toggle to show or hide the label of the data element selected for the Y-axis.
- n. Make changes as needed to refine your selections.
- o. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Bubble Charts

Bubble charts enable you to measure and compare more than two characteristics in the data. Data on Bubble charts is interpreted using the size, position (X and Y co-ordinates), and the color of each Bubble. You can specify these characteristics from the **Content** log of the applicationUnifier.

To create or update Bubble charts for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Bubble Chart**.
 - c. In the **Name** field, enter a name for the Bubble chart.
 - d. (Optional) In the **Description** field, enter a short description about the Bubble chart.
 - e. (Required) From the **Size By** list, select a non-numeric data element to use as the criteria to size the Bubble from the data source selected above.

For the selected data element in the **Size By** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
- f. (Required) From the **X Axis** list, select a data element.

For the selected data element in the **X-Axis** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
- **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
- **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.

- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
- **Percentage:** A percent of the filtered value from the total of the selected data element.
- **Sum:** Sum of all values of the selected data element.

g. (Required) From the **Y Axis** list, select a data element.

For the selected data element in the **Y-Axis** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
- **Count:** (Default for non-numeric data elements) The total number of rows of the selected data element.
- **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date-type data elements.
- **Percentage:** A percent of the filtered value from the total of the selected data element.
- **Sum:** Sum of all values of the selected data element.

h. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

i. (Optional) From the **Color By** list, select one or more data elements to measure using a color-code. Perform any of the following actions:

- To color-code additional data elements, select **Add Color By**.
- To remove a color code and the associated data element, select **Delete (x)**.
- If you have selected more than one color code, select **Drag (=)** to reorder the color codes.

j. From the **Category** list, select a data element to use as a category to differentiate the bars in the chart. Perform any of the following actions:

- To select a data element for the category, select **Add Category**.
- To remove a category and the associated data element, select **Delete (x)**.
- If you have selected more than one category, select **Drag (=)** to reorder the categories.

k. From the **Data Labels** list, select the location for displaying labels on the chart. Choices include:

The following options display:

- **Auto:** The default data label display setting for all types of charts.
- **Center:** The data label displays in the center of each data point on an Area chart, Bar chart, or Line chart.
- **Above Marker:** The data label displays above the marker point.

- **Below Marker:** The data label displays below the marker point.
 - **Before Marker:** The data label displays before the marker point.
 - **After Marker:** The data label displays after the marker point.
 - **None:** The data labels do not display on the chart.
- i. In the **Show X Axis Title** field, toggle to show or hide the label of the data element selected for the X-axis (Step f).
 - m. In the **Show Y Axis Title** field, toggle to show or hide the label of the data element selected for the Y-axis (Step g).
 - n. Make changes as needed to refine the above selections.
 - o. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Combo Charts

Combo charts are a combination of two types of charts that allow you to compare and contrast two data sets in a single view to highlight the similarities or differences between the data sets.

For example:

- Project Controls Managers can use combo charts to monitor the frequency and the cumulative value of Change Orders (COs) over the course of a construction project to detect scope changes early and contract value trends in real time.
- Cost Engineers or Project Managers overseeing a large scale construction project can use combo charts to compare the baseline budget, actual, and the forecast (ETC) on a monthly basis to detect and address financial risks early.

To create or update Combo charts for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Select the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Combo Chart**.

- c. In the **Name** field, enter a name for the Combo chart.
- d. (Optional) In the **Description** field, enter a short description about the Combo chart.
- e. From the **Values** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default. For the selected data element in the **Value** list, select two metrics for the y-axis using any of the following measures:
 - **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
 - **Bar Chart**: A bar chart as a measure of the second metric.
 - **Line Chart**: A line chart as a measure of the second metric.
 - **Area Chart**: An area chart as a measure of the second metric.
- f. (Optional) Add a secondary set of values on the y-axis as follows:
 - i. Select **Add Values**.
 - ii. From the **Values** list, select a second data element from the data source.
 - iii. Select **Set as Secondary Y-Axis** from **More Actions** (***).
 - iv. Select a second pair of metrics to display on the y-axis (step f). To discard the secondary y-axis, select **Remove Secondary Y-Axis** or **Remove**.
- g. (Optional) From the **Color By** list, select a non-numeric data element to differentiate using a color-code. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag** (=) to reorder the color codes.
- h. From the **Category** list, select a non-numeric data element to use as a metric on the x-axis. Perform any of the following actions:
 - To select a data element for the category, select **Add Category**.
 - To remove a category and the associated data element, select **Delete (x)**.
 - If you have selected more than one category, select **Drag** =) to reorder the categories.
- i. From the **Data Labels** list, select the location for displaying labels on the Bar chart. Common options are:
 - **Auto**: The default data label display setting for all types of charts.

- **Center:** The data label displays in the center of an Area chart, Bar chart, or Line chart.
 - **None:** The data labels do not display in the chart.
 - **Above:** The data label displays above the marker point.
 - **Below:** The data label displays below the marker point.
 - **Before:** The data label displays before the marker point.
 - **After:** The data label displays after the marker point.
- j. From the **Orientation** list, select the orientation as either **Horizontal** or **Vertical** (default).
- k. In the **Stacked** field, toggle to show or hide a stacked Bar chart.
- l. In the **Show Category Axis Title** field, toggle to show or hide the label of the data element selected for the X-axis.
- m. In the **Show Value Axis Title** field, toggle to show or hide the label of the data element selected for the Y-axis.
- n. Make changes as needed to refine the above selections.
- o. After making all changes, perform any of the following actions:
- To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Pie Charts and Donut Charts

Pie charts and Donut charts enable you to measure and compare segments within a category. You can create these charts from the **Content** log of the applicationUnifier.

To create or update Pie charts or Donut charts for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Pie Chart**.
 - c. In the **Name** field, enter a name for the chart.

- d. (Optional) In the **Description** field, enter a short description about the chart.
- e. From the **Value** list, select a data element from the data source selected above.
For the selected data element in the **Value** list, select any of the following measures:
 - **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
- f. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.
For more information, see [Configure Drill-down Content for View Types](#).
- g. (Optional) From the **Color By** list, select one or more data elements to measure using a color code. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.
- h. From the **Data Labels** list, select the location for displaying labels on the chart. Choices include:
 - **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of each data point on the chart.
 - **Above Marker**: The data label displays above the marker point.
 - **Below Marker**: The data label displays below the marker point.
 - **Before Marker**: The data label displays before the marker point.
 - **After Marker**: The data label displays after the marker point.
 - **None**: The data labels do not display in the chart.
- i. In the **Donut** field, toggle to show or hide the Pie chart shaped as a Donut chart.
- j. Make changes as needed to refine the above selections.
- k. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.

- To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
- To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Funnel Charts

Funnel charts help you visualize a process through its various stages. Use a Funnel chart to identify bottlenecks and develop process improvements.

To create or update Funnel charts:

1. Sign in to Unifier with company administration credentials.
2. Select the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Funnel Chart**.
 - c. In the **Name** field, enter a name for the Funnel chart.
 - d. (Optional) In the **Description** field, enter a short description about the Funnel chart.
 - e. From the **Value** list, select a data element from the data source selected in step 5a. to represent the actual value measured in each stage. This is represented by the filled-in area of each horizontal slice of the Funnel chart. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
 - **Bar Chart**: A bar chart as a measure of the second metric.
- f. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

- g. From the **Target Value** list, select a data element to represent the goals to be achieved at each stage as a horizontal slice in the Funnel chart.
- h. (Optional) From the **Color By** list, select a non-numeric data element to differentiate using a color-code. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.
- i. From the **Orientation** list, select the orientation as either **Horizontal** or **Vertical** (default).
- j. Make changes as needed to refine the above selections.
- k. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Gauge Charts

Gauge charts are used to evaluate a measure of performance against a goal. The chart resembles a dial and provides a visual of a value on the dial. Gauge charts can be used by:

- Cost Controllers can use a Gauge chart to view key performance metrics using a gauge chart with color-coded thresholds to assess whether project budget is on track or at risk.
- Project Managers can track how much of allocated budget has been spent on a project to determine if the project costs is within budget, near the limit or over budget.

To create or update Gauge charts:

1. Sign in to Unifier with company administration credentials.
2. Select the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Gauge Chart**.

- c. In the **Name** field, enter a name for the Gauge chart.
- d. (Optional) In the **Description** field, enter a short description about the Gauge chart.
- e. From the **Values** list, select a data element from the data source selected in step 5b. The selected values display as metric being measured on the Gauge chart. Displays **Count** by default.
For the selected data element in the **Values** list, select any of the following measures:
 - **Average:** The mean of all values of the selected data element.
 - **Count:** (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage:** A percent of the filtered value from the total of the selected data element.
 - **Sum:** Sum of all values of the selected data element.
 - **Bar Chart:** A bar chart as a measure of the second metric.
- f. Specify a maximum of three thresholds to measure on the Gauge chart. For each threshold specify a range of values and a color code as follows:
 - i. Select **Add Threshold**.
 - ii. In the **Min** field, enter a minimum value for the threshold in the range 0 to 100.
 - iii. In the **Max** field, enter the maximum value for the threshold in the range 0 to 100.
 - iv. From the **Color** ( list, associate a color for each threshold defined.
 - v. (Optional) Repeat this step sequence to specify ranges for three thresholds.
- g. In the **Shape** field, select the shape of the Gauge chart as **Circle** or **Semi-circle**.
- h. Make changes as needed to refine the above selections.
- i. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update KPI Cards

Create Key Performance Indicator (KPI) cards to provide various performance metrics of your projects/shells in visualizations. A maximum of eight KPIs can be included in a visualization. You can create these cards from the **Content** log of the application. Unifier

To create or update KPI cards for data visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **KPI Card**.
 - c. In the **Name** field, enter a name for the KPI card.
 - d. (Optional) In the **Description** field, enter a short description about the card.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
 - **Count:** (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the most recent date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields displays the earliest date.
 - **Sum:** Sum of all values of the selected data element.
- f. From the **Period** list, select a data element to measure time for the data element selected in the previous step. Select any of the following to further specify the time period:
 - **No Period:** (Default) Does not display a measure of time on the KPI card.
 - **Today:** Displays today's date in the format based on the user's preferences.
 - **Current Month:** Displays the month and the year in the format, MONTH YYYY.
 - **Current Year:** Displays the year on the KPI card in the format, YYYY.
 - **Current Quarter:** Displays the year on the KPI card in the format, Q<#> YYYY.
 - g. For KPIs that display currency and amounts, select the display format as follows:
 - i. From the **Decimal Places** list, select display format for decimal values from 0 to 8 places. Defaults to 2 decimal places. For example, select 2 to display values in *nn.dd* format.
 - ii. From the **Abbreviation (Show in thousands, millions etc)** list, select one from the following:
 - **Auto** (default)
 - **None**

- **Thousands** (K)
 - **Millions** (M)
 - **Billions** (B)
 - **Trillions** (T)
- h. Make changes as needed to refine the above selections.
- i. After making all changes, perform any of the following actions:
- To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Pivot Grids

Create or update Pivot grids to organize and analyze data from a selected data source and a selected project/shell in visualizations. You can create these grids from the Content log of the application.Unifier

To create or update Pivot grids for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Pivot Grid**.
 - c. In the **Name** field, enter a name for the Pivot grid.
 - d. (Optional) In the **Description** field, enter a short description about the Pivot grid.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
- **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
- **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.

- **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage:** A percent of the filtered value from the total of the selected data element.
 - **Sum:** Sum of all values of the selected data element.
- f. From the **Columns** list, select a data element to create columns for the Pivot grid.
 - g. (Optional) Select **Add Columns** to include additional column tiers in the Pivot grid.
 - h. From the **Rows** list, select a data element to create rows for the Pivot grid.
 - i. (Optional) Select **Add Rows** to add row tiers in the Pivot grid.
 - j. (Optional) In the **Show Totals** field, toggle to show or hide the column totals in the grid.
 - k. To visually highlight specific fields in the Pivot Grid, [Configure and Manage Conditional Formatting of Tables and Pivot Grids](#).
 - l. Make changes as needed to refine your selections.
 - m. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Pyramid Charts

Pyramid charts help with analyzing how data is distributed, ordered and ranked within an hierarchy. They can also be used to depict the progression of a process from concept to delivery. For example, you can use pyramid charts to compare marketing and sales performances of products in your organization.

To create or update Pyramid charts:

1. Sign in to Unifier with company administration credentials.
2. Select the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.

- b. From the **View Type** list, select **Pyramid Chart**.
- c. In the **Name** field, enter a name for the Pyramid chart.
- d. (Optional) In the **Description** field, enter a short description about the Pyramid chart.
- e. From the **Value** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default. For the selected data element in the **Values** list, select any of the following measures:
 - **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
- f. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**. For more information, see [Configure Drill-down Content for View Types](#).
- g. (Optional) From the **Color By** list, select a non-numeric data element to differentiate using a color-code. A maximum of six colors can be added in the chart. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.
- h. Make changes as needed to refine your selections.
- i. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Scatter Charts

Scatter charts are used to analyze the relationship, patterns, trends, and correlations between two entities.

To create or update Scatter charts:

1. Sign in to Unifier with company administration credentials.
2. Select the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. On the **Create** page, specify the following information:
 - a. From the **Preview Project** list, select an active project/shell, and select **Preview Data** to preview the data you can use to create the chart.
 - b. From the **Data Source** list, select the data source to use for creating the content item.
 - c. From the **View Type** list, select **Scatter Chart**.
 - d. In the **Name** field, enter a name for the Scatter chart.
 - e. (Optional) In the **Description** field, enter a short description about the Funnel chart.
 - f. From the **Y-Axis** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default. For the selected data element in the **Values** list, select any of the following measures:
 - **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
 - g. From the **X-Axis** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default. For the selected data element in the **Values** list, select any of the following measures:
 - **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
 - h. From the **Color By** list, select a non-numeric data element to differentiate using a color-code. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.

- To remove a color code and the associated data element, select **Delete (x)**.
- If you have selected more than one color code, select **Drag** () to reorder the color codes.
- i. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**. For more information, see [Configure Drill-down Content for View Types](#).
- j. From the **Category** list, select a non-numeric data element to use as a metric on the x-axis. A maximum of three categories can be included on the chart. Perform any of the following actions:
 - To select a data element for the category, select **Add Category**.
 - To remove a category and the associated data element, select **Delete (x)**.
 - If you have selected more than one category, select **Drag** () to reorder the categories.
- k. From the **Markers** list, select a data element to associate different shapes with distinct groups to differentiate between data points on the Scatter chart. For example, RFIs associated with the Architectural discipline display as diamond shapes whereas Electrical discipline display as squares.
- l. From the **Data Labels** list, select the location for displaying labels on the Scatter chart. Common options are:
 - **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of an Area chart, Bar chart, or Line chart.
 - **None**: The data labels do not display in the chart.
 - **Above**: The data label displays above the marker point.
 - **Below**: The data label displays below the marker point.
 - **Before**: The data label displays before the marker point.
 - **After**: The data label displays after the marker point.
- m. In the **Zoom and Scroll** field, toggle to enable or disable the ability to zoom and scroll the Scatter chart.
- n. In the **Show X Axis Title** field, toggle to show or hide the label of the data element selected for the X-axis (see step g).
- o. In the **Show Y Axis Title** field, toggle to show or hide the label of the data element selected for the Y-axis (see step f).
- p. Make changes as needed to refine your selections.
- q. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Tables

Create tables to organize and display data from a selected data source and a selected project/shell in visualizations. You can create these tables from the **Content** log of the application.

To create tables for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. In the **Create** page, specify the following information:
 - a. From the **Preview Project** list, select an active project/shell, and select **Preview Data** to preview the data you can use to create the table.
 - b. From the **Data Source** list, select the data source to use for creating the content item.
 - c. From the **View Type** list, select **Table**.
 - d. In the **Name** field, enter a name for the table.
 - e. (Optional) In the **Description** field, enter a short description about the table.
 - f. From the **Columns** list, select a data element to create columns for the table.
 - g. (Optional) Select **Add Columns**, and select a data element to include additional columns in the table.
 - h. From the **Group By** list, select a data element to organize the information based on a specific characteristic. For example, group RFIs based on the RFI reasons.
 - i. (Optional) In the **Show Totals** field, toggle to show or hide the column totals.
 - j. To visually highlight values based on criteria in the table, [Configure and Manage Conditional Formatting of Tables and Pivot Grids](#).
 - k. Make changes as needed to refine the above selections.
 - l. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.
 - To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Create or Update Timeline Charts

Create Timeline charts to visualize data points or events over an extended length of time in a chronological order.

To create Timeline charts for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Create**.
5. In the **Create** page, specify the following information:
 - a. From the **Preview Project** list, select an active project/shell, and select **Preview Data** to preview the data you can use to create the chart.
 - b. From the **Data Source** list, select the data source to use for creating the content item.
 - c. From the **View Type** list, select **Timeline Chart**.
 - d. In the **Name** field, enter a name for the Timeline chart.

Note

The combination of **Name** and **View Type** field values must be unique.

- e. (Optional) In the **Description** field, enter a short description about the Timeline chart.
- f. From the **Event Type** list, select **Single Event** (default) or **Duration Event**.
- g. If you chose **Single Event**, from the **Category (Time Axis)**, select a date type data element that defines the event timeline.
- h. From the **Event Title** list, select a data element that can be used as the title for the timeline event.
- i. From the **Event Detail** list, select a maximum of two event details to track in the Timeline chart.
 - To add another event detail, click **Add**.
 - To remove an event detail and its associated data element, click **Delete (x)**.
- j. If you chose a **Duration Event**, in the **Event Duration** field, select a date or date/time data element to choose the start date and end date of the duration of the Timeline chart.
- k. From the **Color By** list, select a data element to measure using a color-code. To remove a color code and the associated data element, click **Delete (x)**.
- l. From the **Orientation** list, select **Vertical** or **Horizontal** (default).
- m. In the **Timeline Overview** field, toggle to hide or display a compressed overview of the entire timeline.
- n. In the **Tooltip** field, toggle to hide or display tooltips when you hover over events on the Timeline chart.
- o. Make changes as needed to refine the above selections.
- p. After making all changes, perform any of the following actions:
 - To save the chart in a **Draft** status, select **Create Draft**, and return to the **Content** log.
 - To save additional changes made to an existing chart in **Draft** status, select **Update Draft**.
 - To delete the chart, select **Cancel**. You will lose all unsaved changes made to the chart.

- To make the chart available to your users for data visualizations, select **Publish**, and return to the **Content** log.

Duplicate Content

From the Content log, you can efficiently create content by duplicating multiple content items and modifying each as needed. For example, select and create duplicates of a Bar chart, KPI card, and KPI scoreboard, and then modify each accordingly.

You must have Configure permission for visualization content to complete this task.

To duplicate content items for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select the checkbox for one or more content items such as a KPI card or a Bar chart, and then select **Duplicate**.

The duplicate item is created with a **Draft** status wherein the name of the duplicate is suffixed with "Copy1". For example, KPI Card Copy 1.

Publish Content

From the Content log, you can publish content items, such as a Bar chart, a KPI card, or a KPI Scoreboard, that are currently in Draft status. When you publish content, your users can now use this content to create visualization pages in the corresponding data source.

You must have Configure permission for visualization content to complete this task.

To publish content items for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. Use any of the following methods to publish:
 - Publish multiple content items simultaneously from the **Content** log (right pane). In the **Content** log (right pane), select the checkbox for multiple content items in **Draft** status, and then select **Publish**.
 - Update and then publish an individual content item from the **Content** log (right pane):
 - a. In the **Content** log (right pane), select to open a content item in **Draft** status.
 - b. Make changes as required to the content item.
 - c. From the **Actions** menu, select **Update Draft**.
 - d. To publish the updated content item, from the **Actions** menu, select **Restore to Published**.

Unpublish Content

From the Content log, you can unpublish content items that are in Published status whose Usage status indicates either Used or Unused in visualizations. Unpublished content items display Draft status. When you unpublish content, your users will no longer be able to view these content items in the Content drawer of visualization pages in projects/shells and project/shell templates.

Note

Existing project/shell or project/shell template visualizations containing the content will remain unaffected, as they always display the most recent published version unless explicitly modified.

You must have the permission to Configure content for visualizations to complete this task.

To unpublish content items for visualizations:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. Use any of the following methods to unpublish:

In the **Content** log (right pane), select the checkbox for one or more content items in **Published** status, and select **Unpublish**.

or

Select to open a published content item, and then select **Unpublish and Save**.
5. Use any of the following methods to unpublish:
 - Unpublish multiple content items simultaneously from the **Content** log (right pane). In the **Content** log (right pane), select the checkbox for multiple content items in **Published** status, and then select **UnPublish**.
 - Unpublish an individual content item from the **Content** log (right pane):
 - a. In the **Content** log (right pane), select to open a content item in **Published** status.
 - b. Select **Unpublish and Save**.

The status of each unpublished content item now displays as **Draft**.

Delete Content

From the Content log, you can delete multiple content items that are currently in Published or Draft statuses if their Usage status is Unused. An error message displays if you choose to delete a content item in Used status.

You must have Configure permission for visualization content to complete this task.

To delete unused content items:

1. Sign in to Unifier with company administration credentials.

2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select the checkbox for one or more unused content items in **Draft** or **Published** statuses, and then select **Delete**.
5. In the **Delete Items** dialog box, select **Delete** to reconfirm.

View and Export the Audit Log of Visualization Contents

The Audit Log displays a chronological list of actions performed in a visualization by all users with access to the Content log in the Company Workspace (Admin). Company Administrators can view and export the audit log.

You must have Configure or View permissions to check the audit log of content for visualizations in the Company Workspace to perform this task.

To view and export the audit log of a content item:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select the **Audit Log** (🔍) of a visualization.
 - **Modified:** Date and time each change was made in the data source. The date and time format is based on the user's preferences.
 - **Action:** Type of change made to the content, such as, **Created**, **Draft**, **Published**, and **Duplicate**.
 - **Modified By:** Name of the user who made the change in the data source.
5. If you have Configure permission, select **Export** (📄) to download the audit log as an Excel spreadsheet (.xlsx).

View and Export the Visualizations Usage Log

The Usage Log is available for content items in Used status only. The log displays information on where the content item has been used in visualizations. Company Administrators can view and export the usage log for each content item.

You must Configure or View permissions for visualization content in the Company Workspace to perform this task.

To view or export the usage log of a content item:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Visualizations**, and then select **Content**.
4. In the **Content** log (right pane), select **Used** for a content **Name**.
5. In the **Usage Log** drawer, view the following information:
 - **Location:** The location information of a project/shell.

- **Visualization:** Name of the visualization using the content item.
 - **State:** The current state of the visualization as **Synced** or
6. If you have **Configure** permission, select **Export** (↓) to download the log as a Microsoft Excel spreadsheet (.xlsx).

Manage Visualizations in Project/Shell Templates

Company Administrators can use the created data sources and content items to:

- Set up project/shell templates with visualizations
- Set up additional administrators for visualizations
- Set up users and groups who can only view visualizations
- Create visualizations in one or more tabs in project/shell templates and make these available to your users and groups
- Create or edit new content for visualizations in the content library
- Edit visualizations in project/shell templates
- Duplicate visualizations in project/shell templates
- Delete visualizations in project/shell templates
- Manage user/group permissions for specific visualizations who can:
 - Manage or modify visualizations in a project/shell. These users can be regarded as additional project/shell administrators for those visualizations.
 - View specific visualizations in a project/shell. These users can be regarded as end users of those visualizations.

The above tasks are identical to the tasks performed by Project/Shell Administrators at the project/shell-level. However, you will perform the above tasks from the Setup node of a project /shell that rolls up to the Templates node in the Company Workspace tab. To perform the above tasks, see [Administer Visualizations in Projects/Shells](#), and to set these up in the Company Workspace tab, see [Add and Update Project/Shell Templates with Visualizations](#).

After completing the above tasks in a project/shell template, you can perform any of the following tasks:

- Update specific project/shell templates with visualizations
- Update all project/shell templates with visualizations
- Update specific project/shell templates with visualizations
- Update all project/shell templates with visualizations
- View the update history to view details of selected project/shell templates that are updated or not updated

Company Administrators who have Configure or View permissions for either visualizations data sources and/or visualization content, and can set up templates in the Company Workspace tab should review this information.

Prerequisites

To set up visualizations in projects/shell templates and deploy these visualizations to individual projects/shells, ensure you have:

- Created data sources for visualizations
See [Manage Data Sources](#)
- Created content items for visualizations
See [Manage Visualization Content](#).

Add and Update Project/Shell Templates with Visualizations

From the Company Workspace tab, Company Administrators can create and publish visualizations from the Visualizations log of project/shell templates and then deploy the published visualizations to individual projects/shells.

To access the Visualizations log of a project/shell template:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** () , select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. Perform any of the following actions:
 - To add visualizations in the project/shell template, select **Create**. See [Create Visualizations in Projects/Shells](#).
 - To efficiently create similar visualizations that can be modified as needed, select **Duplicate**. See [Duplicate Visualizations in Projects/Shells](#).
 - To delete visualizations from a project/shell template, select **Delete**. See [Delete Visualizations in Projects/Shells](#).
 - Edit a visualization. See [Edit Visualizations in Projects/Shells](#).
 - Modify visualization properties. See [Edit Visualization Properties](#).
 - Manage user/group permissions for specific visualizations. See [Manage User/Group Permissions for Specific Visualizations](#).
 - View and/or download the audit log of a visualization. See [View and Export the Visualizations Audit Log From Projects/Shells](#).
8. Make changes as needed to finalize the visualizations in a project/shell template.
9. From the **Update** menu, select any of the following menu options to update projects/shells with visualizations created in this project/shell template:
 - Select **Shells** to update only selected shells with visualizations. See [Update Specific Projects/Shells with Visualizations From Project/Shell Template](#).
 - Select **All Shells** to update *all* shells with visualizations. See [Update All Projects/Shells with Visualizations From a Project/Shell Template](#).
 - Select **Shell Templates** to update selected shell templates with visualizations. See [Update Selected Project/Shell Templates with Visualizations](#).

- Select **All Shell Templates** to update *all* shell templates with visualizations. See [Update All Shell Templates with Visualizations](#).
- Select **History** to update the job history of projects/shells that were populated with visualizations through project/shell templates. See [Update the History Log Across Shell Templates](#).

Update Specific Projects/Shells with Visualizations From Project/Shell Template

From the Company Workspace tab, you can selectively replicate visualizations across one or more individual projects/shells.

To copy visualizations from a project/shell template into one or more projects/shells:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** (⚙️), select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. In the **Visualizations** log (right pane), select the checkbox for one or more visualizations that you want to replicate.
8. From the **Update** menu, select **Shells**.
9. In the **Update Shells** drawer, select the checkbox for one or more projects/shells that the selected visualizations (step 7) will be copied into, and select **Update**.
10. In the **Update Shells** dialog box, select **Update** to reconfirm.

Review the visualizations in the respective projects/shells.

Note

You can select **Cancel** in any step to discontinue this task.

Update All Projects/Shells with Visualizations From a Project/Shell Template

From the **Company Workspace** tab, you can replicate visualizations across *all* projects/shells.

To copy visualizations from a project/shell template into all projects/shells:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.

5. From the **gear menu** (⚙️), select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. In the **Visualizations** log (right pane), select the checkbox for one or more visualizations that you want to replicate.
8. From the **Update** menu, select **All Shells**.
9. In the **Update All Shells** dialog box, select **Update** to reconfirm.

Review the visualizations in the updated projects/shells.

Note

You can select **Cancel** in any step to discontinue this task.

Update Selected Project/Shell Templates with Visualizations

From the **Company Workspace** tab, you can selectively replicate visualizations across one or more project/shell *templates*.

To copy visualizations from a project/shell template into one or more project/shell *templates*:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** (⚙️), select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. In the **Visualizations** log (right pane), select the checkbox for one or more visualizations that you want to replicate.
8. From the **Update** menu, select **Shell Templates**.
9. In the **Update Shell Templates** drawer, select the checkbox for one or more project/shell templates that the selected visualizations (step 7) will be copied into, and select **Update**.
10. In the **Update Shell Templates** dialog box, select **Update** to reconfirm.

Review the visualizations in the updated project/shell templates.

Note

You can select **Cancel** in any step to discontinue this task.

Update All Shell Templates with Visualizations

From the Company Workspace tab, you can replicate visualizations created in a specific project/shell template across *all* project/shell templates.

To copy visualizations from a project/shell template into all project/shell *templates*:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** () , select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. In the **Visualizations** log (right pane), select the checkbox for one or more visualizations that you want to replicate.
8. From the **Update** menu, select **All Shell Templates**.
9. In the **Update All Shell Templates** dialog box, select **Update** to reconfirm.

Review the visualizations in the updated project/shell templates.

Note

You can select **Cancel** in any step to discontinue this task.

Configure and Manage Conditional Formatting of Tables and Pivot Grids

To visually highlight values based on criteria in a Table or Pivot Grid, you can configure conditional formatting rules at the project or shell templates and shell levels. After rules are set up at the template level, you can push the rules to all new shells.

Limitations

The following limitations apply:

- Only Table/Pivot Grid view is supported.
- Maximum 5 rules per column, 10 columns with rules, 5 conditions per rule.
- Rule names must be unique. At least one condition and style required.
- Conditional formatting not applicable to charts.
- Columns with rules cannot be removed until rules are deleted.
- Export to PDF retains formatting.

To configure and manage conditional formatting of Tables and Pivot Grids:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.

3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** () , select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. Select a Table or Pivot Grid, or create a new one.
8. From the **More Actions** (*******) menu, select **Conditional Formatting**.
9. In the **Conditional Formatting** drawer, select **Add** to create a new rule by specifying a maximum of 5 conditions:
 - a. (Required) In the **Rule Name** field, enter a unique rule name, a maximum length of 60 characters.
 - b. (Required) From the **Column** list, select a data element on which the rule will be applied.
 For Tables, select a data field for a column.
 For Pivot Grids, select a data field for a column, row, or value.
 - c. In the **Condition Builder** block, to define at least one condition:
 - i. Select **Any** (to apply any one condition) or **All** (to apply all conditions), and then select **Add** (+).
 - ii. (Required) From the **Data Element** list, select a data element to create a condition.
 - iii. (Required) From the **Condition** list, select a condition to apply on the selected data element such as **Contains**, **Does not contain**, **Is empty**, or **Is not empty**.
 - iv. (Required) From the **Value** list, enter a value that needs to be satisfied by the condition.
 - v. To add another condition, repeat the previous steps.
 - vi. To discard a specific condition or a group of conditions, select **Delete** ().
 - vii. Select any or all formatting options such as bold, italic, underline, strikethrough, text color, or background color.
 - viii. Preview and adjust the formatting as required, and then perform any of the following actions:
 - To add more rules, select **Create and Close** or **Create and Next**. Rules created for the same data element selected in the **Column** list are grouped together.
 - To discard the condition, select **Cancel**.

When multiple rules are specified, the Conditional Formatting drawer groups the rules by Column or Row.
10. After creating rules, perform any of the following actions in the **Conditional Formatting** drawer:
 - To duplicate multiple rules, select one or more rules, and then select **Duplicate**.
 - To remove multiple rules, select one or more rules, and then select **Remove**.
 - To reorder the rules, select **Drag** ().

- To edit a specific rule, select **Edit** from the **Actions** (***) menu.
- To discard the rule, select **Remove** from the **Actions** (***) menu.

11. Package content with formatting rules.

Upon pushing the shell template to new or existing project shells, all visualizations and their rules will be included.

Update the History Log Across Shell Templates

After populating projects/shells with visualizations, it is a good practice to update the job history of the updated projects/shells to maintain the chronology of actions performed in each project/template.

To update the history log across one or more projects/shells:

1. Sign in to Unifier with company administration credentials.
2. Go to the **Company Workspace** tab, and switch to **Admin** mode.
3. In the left Navigator, select **Templates**, select **Shells**, and then select **Projects**.
4. In the **Project Templates** log (right pane), select a project template.
5. From the **gear menu** (⚙️), select **Open** to open a project template.
6. Under the opened project/shell template node in the left Navigator, select **Setup** and then select **Visualizations**.
7. In the **Visualizations** log (right pane), from the **Update** menu, select **History**.
8. In the **History** drawer, perform any of the following actions:
 - Select the checkbox for each project/shell whose history is to be updated, and select **Refresh**.
 - Select **Cancel Request** to cancel a job request that has not yet started. You cannot cancel a job request that is in progress or revert if the job request has been completed.

Review the history log in the updated projects/shells.

① Note

You can select **Cancel** in any step to discontinue this task.

Administer Visualizations in Projects/Shells

Project/Shell Administrators can access visualization data sources and content published by Company Administrators.

Your Company Administrators can continue to publish new data sources and content to meet the needs of your organization over time. However, any new data sources or new/modified content published and subsequently made available to you will not impact current visualizations created in projects/shells.

When Company Administrators publish new content items or new data sources and make these available to you in a project/shell, you have the option to:

- Update existing visualizations with new content
- Use new data sources/new content items made available to you
- Create visualizations using the new content/new data sources in projects/shells

Project/Shell Administrators can:

- Set up additional administrators for visualizations
- Set up users who can only view visualizations
- Create visualizations in projects/shells and make these available to your users and groups
- Create or edit new content for visualizations in the content library
- Edit visualizations in projects/shells
- Duplicate visualizations in projects/shells
- Delete visualizations in projects/shells
- Manage user/group permissions for specific visualizations who can:
 - Manage or modify visualizations in a project/shell. These users can be regarded as additional project/shell administrators for those visualizations.
 - View specific visualizations in a project/shell. These users can be regarded as end users of those visualizations.

Project/Shell Administrators and administrators in similar capacities should review this information.

Enable Permission to Administer Visualizations in Projects/Shells

To administer visualizations in a project/shell, Project/Shell Administrators must be able to access the **Visualizations** node in the left Navigator. Completing this task displays the **Visualizations** sub-node under the **Setup** node in the left Navigator of the project/shell. As a Project/Shell Administrator, you can set up this permission for yourself as well as for any other users and groups you select as additional project/shell administrators.

To set the permission that will allow you to administer and give access to the **Visualizations** node in the left Navigator of a project/shell:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Access Control**.
4. In the right pane, under the **Administration Mode Access** node, select **Setup** and then select **Visualizations**.
5. In the **Permissions Settings for: Visualizations** dialog box, select **Add**.
 - a. In the **Select User/Groups** block, (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window select yourself and any other users and groups you want to add as administrators for visualizations.
 - ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block (lower block), select the **Setup** permission.

This permission gives the users and groups selected in the upper block, (step 5a) access to the **Visualizations** node in left Navigator of the project/shell in **Admin** mode.
 - c. Select **OK**.

Enable View Permission For Visualizations in Projects/Shells

Apart from setting up additional administrators for a project/shell, Project/Shell Administrators can also set up users and groups who can only view visualizations created in a project/shell. Completing this task displays the Visualizations node in the left Navigator of the project/shell for your users and groups when they sign in to the project/shell in the User mode.

To set the permission that will allow your users and groups to access the Visualizations node in the left Navigator of a project/shell in User mode:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Access Control**.
4. In the right pane, under the **User Mode Access** node, select **Visualizations**.
5. In the **Permissions Settings for: Visualizations** dialog box, select **Add**.
 - a. In the **Select User/Groups** block, (upper block), select **Add Users/Group**.
 - i. In the **User/Group Picker** window select users and groups who can only view visualizations in the current project/shell tab.
 - ii. Select **Add**, and then select **OK**.
 - b. In the **Permission Settings** block (lower block), select the checkbox for the **View** permission.

This will give users and groups, selected in the upper block, (step 5a) access to the **Visualizations** node in left Navigator of the project/shell in **User** mode.
 - c. Select **OK**.

Access the Visualizations Log in a Project/Shell (Admin Mode)

Project/Shell Administrators must have the permission to set up visualizations to perform administration tasks in a project/shell and access the Visualizations log from the left Navigator. For more information on how to set up this permission, see [Enable Permission to Administer Visualizations in Projects/Shells](#).

To access the Visualizations log in the project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
 - **Name:** Name of the visualization. For example, a visualization called **RFI Summary**.
 - **Description:** (Optional) A short statement that outlines the purpose of the visualization.
 - **Location:** (Optional) The location of the visualization in the left Navigator in the **User** mode.
If a location is specified, the visualization displays under the selected business process (BP) node in the **User** mode. For example, the **Visualizations** node displays under the **Contracts** BP node.
(Default) If a location is not specified, the visualization displays under the **Visualizations** node in the **User** mode.
 - **Last Modified Date:** The most recent date that the visualization was modified.
 - **Last Modified By:** The name of the user who last modified the visualization.
 - **Action:** From the **More Action** (⋮) menu select any of the following menu options to perform the corresponding task:
 - **Edit Properties:** Select to [Edit Visualization Properties](#).
 - **Permissions:** Select to [Add Users and Groups For Specific Visualizations](#).
 - **Audit Log:** Select to view the [View and Export the Visualizations Audit Log From Projects/Shells](#).
4. (Optional) To focus on a subset of visualizations displayed in the **Visualizations** log (right pane), select any of the following search filters:
 - **Location:** Select this filter to focus on visualizations in a specific location or node. For example, visualizations in the **Contracts** business process node.
 - **Last Modified Date:** Select this filter and enter a date range to select only those visualizations that were last modified in the selected dates.
 - **Last Modified By:** Select this filter to focus on visualizations modified by a specific user.

As Project/Shell Administrators, you can also perform the following tasks from the Visualizations log:

- [Add Users and Groups For Specific Visualizations](#)
- [Create Visualizations in Projects/Shells](#)
- [Duplicate Visualizations in Projects/Shells](#)

- [Edit Visualization Properties](#)
- [Delete Visualizations in Projects/Shells](#)

Create Visualizations in Projects/Shells

Project/Shell Administrators can create and edit visualizations in projects/shells they have access to. The visualizations can be created using the default content items made available to you by your Company Administrators. Apart from the default content, Project/Shell administrators can also create content in projects/shells. See [Create or Edit Visualization Content Items in Projects/Shells](#).

To create visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select **Create**.
5. In the **Create Visualization** drawer, enter the following information:
 - a. (Required) In the **Name** field, enter a user-friendly name for the visualization.
 - b. In the **Description** field, enter a short description of the visualization.
 - c. From the **Location** list, select the location of the visualization in the left Navigator. For example, select **Document Issues** to display the **Visualizations** node under the **Document Issues** business process (BP) in the **User** mode.
(Default) If a location is not specified, the visualization displays in the **Visualization** node of the project/shell in the **User** mode.
 - d. Select **Continue** to select a layout for the visualization.

Note

You can select **Cancel** in any step to discontinue creating the visualization.

6. In the **Choose layout to start** drawer, select a layout for the visualization. Options include:
 - 1-panel collection
 - 2-panel hero visualization
 - 2-panel side-by-side
 - 2-panel vertical collection
 - 3-panel auto fit
 - 3-panel collection
 - 5-panel collection
7. In the selected blank layout page, select **Library**.
8. In the **Library** drawer, select the **Content** tab.
 - The name of the content item.
 - The type of content, such as a KPI card, Bar chart, and so on.

- The data source used for creating the content item.
 - The published status can be any of the following:
 - **Synced**: Indicates the published content item is in sync with the saved version.
 - **Local**: Indicates the content item has been newly created and is available only in this project/shell.
9. Select a content item, and then select and drag the item onto a block in the visualization layout. Repeat to populate all blocks in the layout. For example, select and drag a stacked Bar chart to the layout.
 10. (Optional) If you want to create content items for the visualization, select **Create**. See [Create or Edit Visualization Content Items in Projects/Shells](#).
 11. Perform any of the following actions in any order:
 - In the **Search** bar, locate a content item by name, data source, view type (such as a Bar chart, Area chart, and so on), or published status.
 - To refresh the list of displayed content items, select **Refresh** (↻).
 - To change the visualization layout, select the **Layout** tab.
 12. Make changes as needed to refine the above selections.
 13. To add visualization in additional tabs, select **Add new tab** (+), adjacent to the **Default** or a renamed tab.
 14. Repeat the above steps for each tab. You can:
 - Add, remove, or update a maximum of 15 tabs with layout and content,
 - Select a different layout in each tab.
 - Drag and reorder the tab sequence.
 - Set up independent filters for each tab.
 - Select **Save** to save changes across all tabs.
 15. After populating the tabs and visualizations, select **Create**, and return to the **Visualizations** log.

Create or Edit Visualization Content Items in Projects/Shells

Project/Shell Administrators can create additional content items at the project/shell level for visualizations. The Create page for such content items is initially labeled Local Copy.

Upon creating content items, you can select and drag these content items onto the visualization layout. The status of these content items displays as **Local** to indicate the content item has been newly created and is available only in this project/shell.

[Video](#)

You can create the following types of content items:

- [Create or Edit Area Charts, Bar Charts, and Line Charts for Visualizations in Projects/ Shells](#)
- [Create or Edit Bubble Charts for Visualizations in Projects/Shells](#)
- [Create or Edit Combo Charts for Visualizations in Projects/Shells](#)
- [Create or Edit Pie Charts and Donut Charts for Visualizations in Projects/Shells](#)

- [Create or Edit Funnel Charts for Visualizations in Projects/Shells](#)
- [Create or Edit Gauge Charts for Visualizations in Projects/Shells](#)
- [Create or Edit KPI Cards for Visualizations in Projects/Shells](#)
- [Create or Edit Pivot Grids for Visualizations in Projects/Shells](#)
- [Create or Edit Pyramid Charts for Visualizations in Projects/Shells](#)
- [Create or Edit Scatter Charts for Visualizations in Projects/Shells](#)
- [Create or Edit Tables for Visualizations in Projects/Shells](#)
- [Create or Edit Timeline Charts for Visualizations in Projects/Shells](#)

Create or Edit Area Charts, Bar Charts, and Line Charts for Visualizations in Projects/ Shells

To create or edit Area charts, Bar charts, and Line charts for visualizations in a project/shell (**Admin** mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a content item in the visualization layout. Proceed to step 6b.
6. On the **Create** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Area Chart**, **Bar Chart**, or **Line Chart**.
 - c. In the **Name** field, enter a name for the chart.
 - d. (Optional) In the **Description** field, enter a short description about the chart.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
- **Count**: (Default) The total number of rows of the selected data element.
- **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median**: The central value among all values of the selected data element.

- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Percentage:** A percent of the filtered value from the total of the selected data element.
 - **Sum:** Sum of all values of the selected data element.
- f. After populating the required fields for a Bar chart, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

- g. (Optional) From the **Color By** list, select a data element to differentiate using a color code. Perform any of the following actions:
- To color-code additional data elements, click **Add Color By**.
 - To remove a color code and the associated data element, click **Delete (x)**.
 - If you have selected more than one color code, click **Drag (≡)** to reorder the color codes.
- h. From the **Category** list, select a data element that you can use as a category to differentiate the bars in the chart. Perform any of the following actions:
- To select a data element for the category, click **Add Category**.
 - To remove a category and the associated data element, click **Delete (x)**.
 - If you have selected more than one category, click **Drag (≡)** to reorder the categories.
- i. h. If the data element selected in the **Value** list (step e) represents a numeric or currency value, specify the display format for these values:
- i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- j. From the **Data Labels** list, select the location for displaying labels on the chart.

Common options are:

- **Auto:** The default data label display setting for all types of charts.
- **Center:** The data label displays in the center of an Area chart, Bar chart, or Line chart.
- **None:** The data labels do not display in the chart.

For Area charts and Line charts, the following additional options display:

- **Above Marker:** The data label displays above the marker point.
- **Below Marker:** The data label displays below the marker point.
- **Before Marker:** The data label displays before the marker point.
- **After Marker:** The data label displays after the marker point.

For Bar charts, the following additional options display:

- **Inside Bar Edge:** The data label displays on the inside edge in a Bar chart.
- **Outside Bar Edge:** The data label displays on the outside edge in a Bar chart.
- k. From the **Orientation** list, select the orientation as either **Horizontal** or **Vertical** (default).
- l. In the **Stacked** field, toggle to show or hide a stacked Bar chart.
- m. In the **Show Category Axis Title** field, toggle to show or hide the label of the data element you selected for the X-axis.
- n. In the **Show Value Axis Title** field, toggle to show or hide the label of the data element you selected for the Y-axis.
- o. Make changes as needed to refine your selections.
- 7. After making all changes, perform any of the following actions:
- 8. After making all changes, perform any of the following actions:
 - If you created an Area chart, Bar chart, or Line chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited content item, select **Update**, and return to the **Edit** page.
- 9. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Bubble Charts for Visualizations in Projects/Shells

To create or edit Bubble charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Bubble chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Bubble Chart**.
 - c. In the **Name** field, enter a name for the Bubble chart.
 - d. (Optional) In the **Description** field, enter a short description about the Bubble chart.

- e. From the **Size By** list, select a data element to use as the criteria to size the bubble from the data source selected above. Displays **Count** by default.

For the selected data element in the **Size By** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
- **Count:** (Default) The total number of rows of the selected data element.
- **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
- **Percentage:** A percent of the filtered value from the total of the selected data element.
- **Sum:** Sum of all values of the selected data element.

- f. From the **X Axis** list, select a data element.

For the selected data element in the **X-Axis** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
- **Count:** (Default) The total number of rows of the selected data element.
- **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
- **Percentage:** A percent of the filtered value from the total of the selected data element.
- **Sum:** Sum of all values of the selected data element.

- g. From the **Y Axis** list, select a data element.

For the selected data element in the **Y-Axis** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
- **Count:** (Default) The total number of rows of the selected data element.
- **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
- **Percentage:** A percent of the filtered value from the total of the selected data element.
- **Sum:** Sum of all values of the selected data element.

- h. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

- i. From the **Color By** list, select one or more data elements to measure using a color-code. Perform any of the following actions:
 - To color-code additional data elements, click **Add Color By**.
 - To remove a color code and the associated data element, click **Delete (x)**.
 - If you have selected more than one color code, click **Drag (≡)** to reorder the color codes.
 - j. From the **Category** list, select a data element to use as a category to differentiate the bars in the chart. Perform any of the following actions:
 - To select a data element for the category, click **Add Category**.
 - To remove a category and the associated data element, click **Delete (x)**.
 - If you have selected more than one category, click **Drag (≡)** to reorder the categories.
 - k. If the data elements selected for the **X-Axis** and **Y-Axis** (steps f and g) represent numeric or currency values, specify the display format for these values:
 - i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
 - l. From the **Data Labels** list, select the location for displaying labels on the chart. Choices include:

The following options display:

 - **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of each data point on an Area chart, Bar chart or Line chart.
 - **Above Marker**: The data label displays above the marker point.
 - **Below Marker**: The data label displays below the marker point.
 - **Before Marker**: The data label displays before the marker point.
 - **After Marker**: The data label displays after the marker point.
 - **None**: The data labels do not display on the chart.
 - m. In the **Show X Axis Title** field, slide right to display the label of the data element you selected for the X-axis (See step g).
 - n. In the **Show Y Axis Title** field, slide right to display the label of the data element you selected for the Y-axis (See step h).
 - o. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
- If you created a Bubble chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited Bubble chart, select **Update**, and return to the **Edit** page.

8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Combo Charts for Visualizations in Projects/Shells

To create or edit Combo charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell, and then proceed to step 6.
 - To edit an existing visualization, select the visualization in the log, select **Edit**, and then proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Combo chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Combo Chart**.
 - c. In the **Name** field, enter a name for the Combo chart.
 - d. (Optional) In the **Description** field, enter a short description about the Combo chart.
 - e. From the **Values** list, select a data element from the data source selected above. A maximum of three values can be selected for a Combo chart. For each value, select a type of chart (Bar, Line, or Area) and a measure listed below. Displays **Count** by default.

For each data element selected in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
 - **Count:** (Default) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum:** Sum of all values of the selected data element.
- f. (Optional) From the **Color By** list, select a data element to measure using a color-code. A maximum of three Color By values can be selected for a Combo chart. Perform any of the following actions:

- To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (≡)** to reorder the color codes.
- g. From the **Category** list, select a data element to use as a category to differentiate the bars on the chart. A maximum of three categories can be selected for a Combo chart. Perform any of the following actions:
- To select a data element for the category, select **Add Category**.
 - To remove a category and the associated data element, select **Delete (x)**.
 - If you have selected more than one category, select **Drag (≡)** to reorder the categories.
- h. If the data elements selected for the **Value** list (step e) represents a numeric or currency value, specify the display format for these values:
- i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- i. From the **Data Labels** list, select the position for displaying labels on the charts. Choices include:
- The following options display:
- **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of each data point on an Area chart, Bar chart or Line chart.
 - **Above Marker**: The data label displays above the marker point.
 - **Below Marker**: The data label displays below the marker point.
 - **Before Marker**: The data label displays before the marker point.
 - **After Marker**: The data label displays after the marker point.
 - **None**: The data labels do not display on the chart.
- j. From the **Orientation** list, select **Vertical** or **Horizontal**.
- k. In the **Stacked** field, toggle to hide or display stacked bar charts in the Combo chart.
- l. In the **Show Color by Axis Title** field, toggle to hide or display the label of the data element you selected for the X-axis in the **Color By** field (Step f).
- m. In the **Show Values Axis Title** field, toggle to hide or display the label of the data element you selected for the Y-axis in the Values list (Step e).
- n. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
- If you created a Combo chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited Combo chart, select **Update**, and return to the **Edit** page.

8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Pie Charts and Donut Charts for Visualizations in Projects/Shells

To create or edit Pie charts and Donut charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Pie chart or Donut chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Pie Chart**.
 - c. In the **Name** field, enter a name for the bubble chart.
 - d. In the **Description** field, enter a short description about the bubble chart.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
 - **Count:** (Default) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum:** Sum of all values of the selected data element.
- f. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.
- For more information, see [Configure Drill-down Content for View Types](#).
- g. From the **Color By** list, select one or more data elements to measure using a color code. Perform any of the following actions:
 - To color-code additional data elements, click **Add Color By**.

- To remove a color code and the associated data element, click **Delete (x)**.
- If you have selected more than one color code, click **Drag (≡)** to reorder the color codes.
- h. If the data element selected in the **Value** list (step e) represents a numeric or currency value, specify the display format for these values:
 - i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- i. From the **Data Labels** list, select the location for displaying labels on the bar chart. Choices include:

The following options display:

 - **Auto**: The default data label display setting for all types of charts.
 - **Center**: The data label displays in the center of each data point on an Area chart, Bar chart or Line chart.
 - **Above Marker**: The data label displays above the marker point.
 - **Below Marker**: The data label displays below the marker point.
 - **Before Marker**: The data label displays before the marker point.
 - **After Marker**: The data label displays after the marker point.
 - **None**: The data labels do not display in the chart.
- j. In the **Donut** field, slide right to display the pie chart shaped as a donut chart.
- k. Make changes as needed to refine the above selections.
- 7. After making all changes, perform any of the following actions:
 - If you created a Pie chart or Donut chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited charts, select **Update**, and return to the **Edit** page.
- 8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Funnel Charts for Visualizations in Projects/Shells

To create or edit Funnel charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.

- Select a visualization in the log, and then select **Edit**. Proceed to step 5.
- 5. On the **Edit** page, select **Edit** (✎) for a Funnel chart in the visualization layout. Proceed to step 6b.
- 6. On the **Create** or **Edit** page, specify or update the following information:
 - a. From the **Preview Data** list, select an active project or shell, and select **Preview Data** to preview the data you can use to create the chart.
 - b. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - c. From the **View Type** list, select **Funnel Chart**.
 - d. In the **Name** field, enter a name for the Funnel chart.
 - e. (Optional) In the **Description** field, enter a short description about the Funnel chart.
 - f. From the **Value** list, select a data element from the above selected data source to represent the actual value measured in each stage. This is represented by the filled-in area of each horizontal slice in the Funnel chart. Displays **Count** by default.

For each data element selected in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
 - **Count**: (Default) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum**: Sum of all values of the selected data element.
- g. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.
- For more information, see [Configure Drill-down Content for View Types](#).
- h. From the **Target Value** list, select a data element to represent the goals to be achieved at each stage as a horizontal slice in the Funnel chart.
 - i. From the **Color By** list, select a data element to measure using a color-code. A maximum of six colors can be selected for the Funnel chart. Perform any of the following actions:
 - To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (≡)** to reorder the color codes.
 - j. h. If the data element selected in the **Value** list (step f) represents a numeric or currency value, specify the display format for these values:
 - i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.

- ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
- iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- k. From the **Orientation** list, select **Vertical** or **Horizontal**.
- l. Make changes as needed to refine the above selections.
- 7. After making all changes, perform any of the following actions:
 - If you created a Funnel chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited Combo chart, select **Update**, and return to the **Edit** page.
- 8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Gauge Charts for Visualizations in Projects/Shells

To create or edit Gauge charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Gauge chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Gauge Chart**.
 - c. In the **Name** field, enter a name for the Gauge chart.
 - d. (Optional) In the **Description** field, enter a short description about the Gauge chart.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For each data element selected in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
- **Count**: (Default) The total number of rows of the selected data element.
- **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.

- **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum:** Sum of all values of the selected data element.
- f. From the **Target** list, select a data element to use as a measure for targets.
 - g. In the **Threshold** field, specify a maximum of three thresholds to measure on the Gauge chart. For each threshold specify a range of values and a color code as follows:
 - i. Click **Add Threshold**.
 - ii. In the **Min** field, enter a minimum value for the threshold in the range 0 to 100.
 - iii. In the **Max** field, enter the maximum value for the threshold in the range 0 to 100.
 - iv. From the **Color** () list, associate a color for each threshold defined.
 - h. If the data elements selected for the **Value** list (step e) represents a numeric or currency value, specify the display format for these values:
 - i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
 - i. In the **Shape** field, select the shape of the Gauge chart as **Circle** or **Semi-circle**.
 - j. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
 - If you created a Gauge chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited charts, select **Update**, and return to the **Edit** page.
 8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit KPI Cards for Visualizations in Projects/Shells

Create or edit Key Performance Indicator (KPI) cards to provide various performance metrics of your projects/shells in visualizations. A maximum of eight KPIs can be included in a visualization.

To create or edit KPI cards for visualizations in a project/shell (**Admin** mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.

5. On the **Edit** page, select **Edit** (✎) for a KPI card in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. From the **Preview Data** list, select an active project or shell, and select **Preview Data** to preview the data you can use to create or update the card.
 - b. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - c. From the **View Type** list, select **KPI Card**.
 - d. In the **Name** field, enter a name for the KPI card.
 - e. (Optional) In the **Description** field, enter a short description about the KPI card.
 - f. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
 - **Count**: (Default) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum**: Sum of all values of the selected data element.
- g. From the **Period** list, select a data element to measure time for the data element selected in the previous step. Select any of the following to further specify the time period:
 - **No Period**: (Default) Does not display a measure of time on the KPI card.
 - **Today**: Displays today's date in the format based on the user's preferences.
 - **Current Month**: Displays the month and the year in the format, MONTH YYYY.
 - **Current Year**: Displays the year on the KPI card in the format, YYYY.
 - **Current Quarter**: Displays the year on the KPI card in the format, Q<#> YYYY.
 - h. For KPIs that display currency and amounts, select the display format as follows:
 - i. From the **Decimal Places** list, select display format for decimal values from 0 (default) to 8 places. For example, select 2 to display values in *nn.dd* format.
 - ii. From the **Abbreviation (Show in thousands, millions etc)** list, select one from the following:
 - **Auto** (default)
 - **None**
 - **Thousands (K)**
 - **Millions (M)**

- **Billions (B)**
- **Trillions (T)**
- i. Make changes as needed to refine the above selections.
- 7. After making all changes, perform any of the following actions:
 - If you created a KPI card, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited charts, select **Update**, and return to the **Edit** page.
- 8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Pivot Grids for Visualizations in Projects/Shells

To create or edit Pivot grids for visualizations in a project/shell (**Admin** mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Pivot grid in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Pivot Grid**.
 - c. In the **Name** field, enter a name for the Pivot grid.
 - d. (Optional) In the **Description** field, enter a short description about the Pivot grid.
 - e. From the **Value** list, select a data element from the data source selected above. Displays **Count** by default.

For the selected data element in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
- **Count:** (Default) The total number of rows of the selected data element.
- **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median:** The central value among all values of the selected data element.
- **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.

- **Sum:** Sum of all values of the selected data element.
- f. From the **Columns** list, select a data element to create columns for the Pivot grid.
- g. (Optional) To include additional column tiers in the Pivot grid, click **Add Columns**.
- h. From the **Rows** list, select a data element to create rows for the Pivot grid.
- i. (Optional) Click **Add Rows** to include additional row tiers in the Pivot grid.
- j. (Optional) In the **Show Totals** field, toggle to show or hide the column totals in the grid.
- k. To visually highlight specific fields in the Pivot Grid, Configure and Manage Conditional Formatting of Tables and Pivot Grids.
- l. Make changes as needed to refine the above selections.
- 7. After making all changes, perform any of the following actions:
 - If you created a Pivot grid, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited grid, select **Update**, and return to the **Edit** page.
- 8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Pyramid Charts for Visualizations in Projects/Shells

To create or edit Pyramid charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Pyramid chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Pyramid Chart**.
 - c. In the **Name** field, enter a name for the Pyramid chart.
 - d. (Optional) In the **Description** field, enter a short description about the Pyramid chart.
 - e. From the **Value** list, select a data element from the data source selected above. A maximum of three values can be selected for a Pyramid chart. Displays **Count** by default.

For each data element selected in the **Value** list, select any of the following measures:

- **Average:** The mean of all values of the selected data element.
 - **Count:** (Default) The total number of rows of the selected data element.
 - **Max:** For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median:** The central value among all values of the selected data element.
 - **Min:** For numeric fields, displays the lowest value of the selected data element. For date fields, displays the minimum date.
 - **Sum:** Sum of all values of the selected data element.
- f. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.

For more information, see [Configure Drill-down Content for View Types](#).

- g. From the **Color By** list, select a non-numeric data element to differentiate using a color-code. A maximum of six colors can be added in the chart. Perform any of the following actions:
- To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.
- h. If the data element selected in the **Value** list (step e) represents a numeric or currency value, specify the display format for these values:
- i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- i. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
- If you created a Pyramid chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited chart, select **Update**, and return to the **Edit** page.
8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Scatter Charts for Visualizations in Projects/Shells

To create or edit Scatter charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.

3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a Scatter chart in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell, and then select **Preview Data**.
 - b. From the **View Type** list, select **Scatter Chart**.
 - c. In the **Name** field, enter a name for the Scatter chart.
 - d. (Optional) In the **Description** field, enter a short description about the Scatter chart.
 - e. From the **Y-Axis** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default.

For the selected data element in the **Values** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
 - **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
 - **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
 - **Median**: The central value among all values of the selected data element.
 - **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
 - **Percentage**: A percent of the filtered value from the total of the selected data element.
 - **Sum**: Sum of all values of the selected data element.
- f. From the **X-Axis** list, select a data element from the data source selected in step 5b. The selected values display as metrics on the y-axis. Displays **Count** by default.

For the selected data element in the **Values** list, select any of the following measures:

- **Average**: The mean of all values of the selected data element.
- **Count**: (Default for non-numeric data elements) The total number of rows of the selected data element.
- **Max**: For numeric fields, displays the highest value. For date fields, displays the maximum date.
- **Median**: The central value among all values of the selected data element.
- **Min**: For numeric fields, displays the lowest value of the selected data element. This measure is not applicable to date fields.
- **Percentage**: A percent of the filtered value from the total of the selected data element.

- **Sum:** Sum of all values of the selected data element.
- g. After populating the required fields, you can allow your users to explore related data using dynamic content by selecting **More Actions (...)** and then selecting **Configure Drill down**.
- For more information, see [Configure Drill-down Content for View Types](#).
- h. (Optional) From the **Color By** list, select a non-numeric data element to differentiate using a color-code. A maximum of three colors can be added in the chart. Perform any of the following actions:
- To color-code additional data elements, select **Add Color By**.
 - To remove a color code and the associated data element, select **Delete (x)**.
 - If you have selected more than one color code, select **Drag (=)** to reorder the color codes.
- i. From the **Category** list, select a non-numeric data element to use as a metric on the x-axis. A maximum of three categories can be included on the chart. Perform any of the following actions:
- To select a data element for the category, select **Add Category**.
 - To remove a category and the associated data element, select **Delete (x)**.
 - If you have selected more than one category, select **Drag (=)** to reorder the categories.
- j. From the **Markers** list, select a data element to associate different shapes with distinct groups to differentiate between data points on the Scatter chart.
- For example, RFIs associated with the Architectural discipline display as diamond shapes whereas Electrical discipline display as squares.
- k. If the data elements selected for the **X-Axis** and **Y-Axis** (steps f and g) represent numeric or currency values, specify the display format for these values:
- i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- l. From the **Data Labels** list, select the location for displaying labels on the Scatter chart.
- Common options are:
- **Auto:** The default data label display setting for all types of charts.
 - **Center:** The data label displays in the center of an Area chart, Bar chart, or Line chart.
 - **None:** The data labels do not display in the chart.
 - **Above:** The data label displays above the marker point.
 - **Below:** The data label displays below the marker point.
 - **Before:** The data label displays before the marker point.
 - **After:** The data label displays after the marker point.

- m. In the **Zoom and Scroll** field, toggle to enable or disable the ability to zoom and scroll the Scatter chart.
 - n. In the **Show X Axis Title** field, toggle to show or hide the label of the data element selected for the X-axis (See step g).
 - o. In the **Show Y Axis Title** field, toggle to show or hide the label of the data element selected for the Y-axis (See step f).
 - p. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
- If you created a Scatter chart, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited chart, select **Update**, and return to the **Edit** page.
8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Tables for Visualizations in Projects/Shells

To create or edit tables for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
5. On the **Edit** page, select **Edit** (✎) for a table in the visualization layout. Proceed to step 6b.
6. On the **Create** or **Edit** page, specify or update the following information:
 - a. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - b. From the **View Type** list, select **Table**.
 - c. In the **Name** field, enter a name for the table.
 - d. (Optional) In the **Description** field, enter a short description about the table.
 - e. From the **Columns** list, select a data element to create columns for the table.
 - f. (Optional) To include additional columns in the table, click **Add Columns** and select a data element.
 - g. From the **Group By** list, select a data element to organize the information based on a specific characteristic. For example, group RFIs based on the RFI reasons.
 - h. (Optional) In the **Show Totals** field, toggle to show or hide the column totals in the grid.

- i. To visually highlight specific fields in the Pivot Grid, Configure and Manage Conditional Formatting of Tables and Pivot Grids.
 - j. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
 - If you created a table, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited table, select **Update**, and return to the **Edit** page.
8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Create or Edit Timeline Charts for Visualizations in Projects/Shells

To create or edit Timeline charts for visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
 2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
 3. In the left Navigator, select **Setup**, and then select **Visualizations**.
 4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new visualization in the project/shell. Proceed to step 6.
 - Select a visualization in the log, and then select **Edit**. Proceed to step 5.
 5. In the **Edit** page, select **Edit** (✎) for a Combo chart in the visualization layout. Proceed to step 6b.
 6. In the **Create** or **Edit** page, specify or update the following information:
 - a. From the **Preview Data** list, select an active project or shell, and select **Preview Data** to preview the data you can use to create the chart.
 - b. To preview the data before creating the chart:
 - i. From the **Data Source** list, select the data source to use for creating the content item. The list shows published content in the alphabetical order.
 - ii. From the **Preview Project** list, select an active project/shell and then click **Preview Data**.
 - c. From the **View Type** list, select **Timeline Chart**.
 - d. In the **Name** field, enter a name for the Timeline chart.
- Note**

The combination of **Name** and **View Type** field values must be unique.
- e. (Optional) In the **Description** field, enter a short description about the Timeline chart.
 - f. From the **Event Type** list, select **Single Event** (default) or **Duration Event**.
 - g. If you chose **Single Event**, from the **Category (Time Axis)**, select a date field that defines the event timeline.
 - h. From the **Event Title** list, select a data element that can be used as the title for the timeline event.

- i. From the **Event Detail** list, select a maximum of two event details to track in the timeline chart.
 - To add a another event detail, click **Add**.
 - To remove an event detail and its associated data element, click **Delete (x)**.
- j. If you chose a **Duration Event**, in the **Event Duration** field, select a date or date/time data element to choose the start date and end date of the duration of the Timeline chart.
- k. From the **Color By** list, select a data element to measure using a color-code. To remove a color code and the associated data element, click **Delete (x)**.
- l. If the data element selected in the **Event Detail** field (step h) represents a numeric or currency value, specify the display format for this value:
 - i. From the **Decimal Places** list, select the number of decimal places following the decimal point to be used for numeric values. Choices include 0 through 8.
 - ii. From the **Abbreviations** list, select the abbreviated format to be used for currency values. Choices include: **Auto** (default), **None**, **Thousands (K)**, **Millions (M)**, **Billions (B)**, and **Trillions (T)**.
 - iii. From the **Currency Options** list, select the currency used by the project/shell. Choices include: **None**, **Shell Currency**, and **Base Currency**.
- m. From the **Orientation** list, select **Vertical** or **Horizontal** (default).
- n. In the **Timeline Overview** field, toggle to hide or display a compressed overview of the entire timeline.
- o. In the **Tooltip** field, toggle to hide or display tooltips when you hover over events on the Timeline chart.
- p. Make changes as needed to refine the above selections.
7. After making all changes, perform any of the following actions:
 - If you created a table, select **Create**, and return to the **Edit** page.
 - To confirm all the changes made to the edited table, select **Update**, and return to the **Edit** page.
8. On the **Edit** page, select **Save** to update the visualization with any created or edited content.

Edit Content Items in the Visualization Layout

Apart from editing content items you add in the Library, you can edit content items on the visualization layout page.

To edit content items from visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select a visualization, and select **Edit**.
5. On the **Edit** page, select a content item in the visualization layout, and select **Edit** (✎).
6. Make changes to the content item, and then select **Update**.

7. On the **Edit** page, perform any of the following actions:
 - To confirm all the changes made to the visualization, select **Save**.
 - To discontinue the process, select **Cancel** any time.

Configure and Manage Conditional Formatting of Tables and Pivot Grids

Conditional formatting enhances the clarity of data in Table and Pivot Grid views by allowing you to set rules that visually highlight values based on criteria. You can use this to identify trends, outliers, or key metrics through defined formatting styles such as font color, background color, and font style.

Limitations

The following limitations apply:

- Only Table/Pivot Grid view is supported.
- Maximum 5 rules per column, 10 columns with rules, 5 conditions per rule.
- Rule names must be unique. At least one condition and style required.
- Conditional formatting not applicable to charts.
- Columns with rules cannot be removed until rules are deleted.
- Export to PDF retains formatting.

To configure and manage conditional formatting of tables and pivot grids in a project or shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select any of the following actions:
 - Select **Create** to add a new Table or Pivot Grid visualization in the project/shell.
 - Select a Table or Pivot Grid visualization with a *Draft* status in the log, and then select **Edit**.
5. From the **More Actions** (*******) menu, select **Conditional Formatting**.
6. In the **Conditional Formatting** drawer, select **Add** to create a new rule by specifying a maximum of 5 conditions:
 - a. (Required) In the **Rule Name** field, enter a unique rule name, a maximum length of 60 characters.
 - b. (Required) From the **Column** list, select a data element on which the rule will be applied.

For Tables, select a data field for a column.

For Pivot Grids, select a data field for a column, row, or value.
 - c. In the **Condition Builder** block, to define at least one condition:
 - i. Select **Any** (to apply any one condition) or **All** (to apply all conditions), and then select **Add (+)**.

- ii. (Required) From the **Data Element** list, select a data element to create a condition.
- iii. (Required) From the **Condition** list, select a condition to apply on the selected data element such as **Contains**, **Does not contain**, **Is empty**, or **Is not empty**.
- iv. (Required) From the **Value** list, enter a value that needs to be satisfied by the condition.
- v. To add another condition, repeat the previous steps.
- vi. To discard a specific condition or a group of conditions, select **Delete** (🗑️).
- vii. Select any or all formatting options such as bold, italic, underline, strikethrough, text color, or background color.
- viii. Preview and adjust the formatting as required, and then perform any of the following actions:
 - To add more rules, select **Create and Close** or **Create and Next**. Rules created for the same data element selected in the **Column** list are grouped together.
 - To discard the condition, select **Cancel**.

When multiple rules are specified, the Conditional Formatting drawer groups the rules by Column or Row.

7. After creating rules, perform any of the following actions from the **Actions** (***) menu:
 - To edit a rule, select **Edit**.
 - To discard the rule, select **Remove**.
8. To reorder the rules, select **Drag** (≡). Update visualizations in project shells as needed, retaining all applicable formatting.
9. For existing shells, you can update the templates and push new or modified rules to project or shell visualizations.

Configure Drill-down Content for View Types

To provide your users with a rich interactive content experience, you can configure drill-down options that enable your users to explore related data from within the current context of a view type (chart).

The drill-down menu can be configured for the following view types:

- Bar charts
- Bubble charts
- Funnel charts
- Pie charts
- Scatter charts
- Pyramid charts

Prerequisites

You have the required permissions to create and manage the Visualizations **Content** log from the **Company Workspace** tab or modify content in the Visualizations **Setup** node of a project/shell.

To configure drill-down content for the above view types

1. Sign in with company administration or project/shell administration credentials, and switch to **Admin** mode.
2. In the left Navigator, select any of the following nodes:
 - Select **Company Workspace** tab, select **Visualizations**, and then select **Content** log
 - Select a targeted project/shell tab, select **Setup**, and then select **Visualizations**.
3. In the **Content** log (right pane), create or edit a visualization.
 - If you chose to create a visualization, enter the required information on the **Create** page.
 - If you chose to edit a visualization, select a content item in the visualization layout, such as a Bar Chart or a Pie chart.
4. From the **More Actions** (...) menu of the selected content item, and then select **Configure drill-down**.
5. On the **Configure Drill Down** page:
 - a. Select **+ Add Level** to create a drill-down level.

You can create a maximum of six nested-levels of drill-down content.
 - b. For each level, enter the following information:
 - i. To create from an existing drill-down configuration, from the **Copy from Existing Content** list, select published content from the same data source.
 - ii. Use this option to quickly create by copying existing drill-down configurations.
 - iii. From the **View Type** list, select any of the following:
 - Bar chart
 - Bubble chart
 - Funnel chart
 - Pie chart
 - Scatter chart
 - Pyramid chart

Note

If you select Table or Pivot grid, you cannot add any more levels. Therefore, ensure it is the final level in the drill-down configuration. Also, conditional formatting in Pivot Grid and Table view is not supported for drill-down content.

- iv. In the **Name** field, enter a name for the selected chart.
- v. Complete the remaining information as outlined in the [Create or Update Content for Data Visualizations](#) or [Create or Edit Visualization Content Items in Projects/ Shells](#) for each of the above charts.
- vi. Select **Create**.
- c. For additional drill-down levels, repeat the above sequence as needed.
- d. To finalize the drill-down levels, perform any of the following actions:
 - To reorder the drill-down sequence, select **Drag** (

=

).

- To delete a drill-down level, select **Remove** (



)

- To remove all drill-down levels, select the checkbox displaying the total number of items.
- To preview the drill-down configuration before publishing, from the **More Actions** (...) menu, select **Preview Drilldown**.
- To return to the visualization, select **Back to Main Content**.

Remove Content Items From Visualizations in Projects/Shells

You can remove content items from the visualization layout as needed.

To remove content items from visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select a visualization, and select **Edit**.
5. On the **Edit** page, select a content item in the visualization layout, and select **Remove** (🗑️).

Edit Visualizations in Projects/Shells

To edit visualizations in a project/shell (Admin mode):

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select a visualization.
5. In the visualization layout page, select **Edit**.
6. Perform any of the following actions to modify the visualization:
 - Add content items from the visualization layout. See [Create Visualizations in Projects/Shells](#) (step 9).
 - Remove content items from the visualization layout. See [Remove Content Items From Visualizations in Projects/Shells](#)
 - Create additional content items for use in visualizations. See [Create or Edit Visualization Content Items in Projects/Shells](#).

- Select another layout for the visualization from the **Layout** tab.
- 7. To add one or more tabs, select **Add new tab** (+), adjacent to the **Default** or a renamed tab, and repeat the previous step in each tab. Tab names cannot exceed a maximum of 120 characters.
 - Add, remove, or update a maximum of 15 tabs with layout and content,
 - Select a different layout in each tab.
 - Drag and reorder the tab sequence.
 - Set up independent filters for each tab.
 - Select **Save** to save changes across all tabs.
- 8. Make changes as needed to refine the above selections.
- 9. Perform any of the following actions to finish editing:
 - To save all the changes made to the visualization, select **Save**, and return to the **Visualizations** log.
 - To discontinue editing the visualization, select **Cancel** at any time. All unsaved changes will be lost.

Duplicate Visualizations in Projects/Shells

Project/Shell Administrators can efficiently create visualizations by duplicating current visualizations and then modifying each as needed in the Visualizations log of projects/shells they have access to.

You must have the Setup permission enabled for visualizations in the specific project/shell to perform this task.

To duplicate visualizations from the Visualizations log of a project/shell:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select the checkbox adjacent to the **Name** of a visualization you want to copy, and then select **Duplicate**.

The name of the duplicate visualization is suffixed with "_Copy1". For example, RFI Summary Report_Copy1.

Delete Visualizations in Projects/Shells

Project/Shell Administrators can delete visualizations from the Visualizations log of projects/shells they have access to.

You must have the Setup permission enabled for visualizations in the specific project/shell to perform this task.

To delete visualizations from the Visualizations log of a project/shell:

1. Sign in to Unifier with project/shell administration credentials.

2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), select the checkbox adjacent to the **Name** of a visualization you want to delete, and then select **Delete**.
5. In the **Delete Item(s)** confirmation dialog box, select **Delete**.

Edit Visualization Properties

Project/Shell Administrators can edit visualizations from the Visualizations log of projects/shells they have access to.

You must have the Manage permission enabled for visualizations in the specific project/shell to perform this task.

To edit visualizations from the Visualizations log of a project/shell:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), from the **Action** () menu, select **Edit Properties** for a visualization.
5. In the **Edit Properties** drawer, edit the following information for the selected visualization:
 - **Name:** Name of the visualization. For example, a visualization called *RFI Summary*.
 - **Description:** (Optional) A short description of the visualization.
 - **Location:** (Optional) The location of the visualization in the left Navigator. For example, select **Document Issues** to display the **Visualizations** node under the Document Issues business process (BP) in the **User** mode.
(Default) If a location is not specified, the visualization displays in the **Visualization** log of the project/shell in the **User** mode.
6. Perform any of the following actions:
 - To save the information modified above, select **Update**.
 - To discontinue editing the properties, select **Cancel**, and return to the **Visualization** log.

Manage User/Group Permissions for Specific Visualizations

Project/Shell Administrators are the default owners for visualizations they create in a project/shells. By default, they have all permissions on those visualizations. Their permissions on those visualizations cannot be modified or revoked. As the owner of each visualization, they can specify users and groups who can receive access to their visualizations and the level of access for each user/group.

For example, if you are the creator and owner (by default) of the **RFI Summary** visualization. You can give the following permissions to two groups to access this visualization:

- Set up a Business Executives group with **View** permission
- Set up supplementary Project/Shell Administrators with **Modify** permission
- As the visualization owner, you have all permissions by default:
 - **Manage Content:** You can edit visualizations in a project/shell by creating content and modifying existing content. By default, you also get modify and view permissions in the Admin mode.
 - **Modify:** You can edit visualizations in a project/shell by modifying only the displayed content. By default, you also get view permission in the Admin mode.
 - **View (Default):** You can only view visualizations in a project/shell in the Admin mode.

The following visualization tasks can be performed by users and groups assigned with each permission:

Visualization Tasks	Manage Content Permission	Modify Permission	View Permission
View visualizations	Yes	Yes	Yes
Edit visualizations	Yes	Yes	No
Modify visualization layout and rearrange content items	Yes	Yes	No
Add content items from the content library	Yes	Yes	No
Create and edit content items in the content library	Yes	No	No
Remove content items from the library	Yes	No	No
Edit content items in the layout	Yes	Yes	No
Remove content items from the layout	Yes	Yes	No
Conditional Formatting of Table and Pivot Grids	Yes	No	No

Add Users and Groups For Specific Visualizations

Project/Shell Administrators can add users and groups to a project/shell from the Permissions page.

You must be the owner of the visualization or have the Manage permission enabled for visualizations in the project/shell to perform this task.

To add project/shell-level users and groups for specific visualizations:

1. Sign in to Unifier with shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), from the **Action** () menu, select **Permissions** for a visualization.
5. In the **Permissions** page, select **Add User or Group**.

6. In the **Add users and groups** drawer:
 - a. Select the **Users** tab or **Groups** tab to view a corresponding list of users and groups that can be added to this project/shell.

Alternatively, in the **Search** bar, you can type a search text and press **Enter** on your keyboard to locate users and groups that meet your search criteria.
 - b. (Groups only) Select **Member Details** (>) to view the members in a group, or select **Sort By** to alphabetically sort the groups by **Name** or **Description**.
 - c. Select one or more users or groups by selecting the checkbox adjacent to the **Name** field of each user and group.

To select all users and groups, select the checkbox for the total user or group count. For example, select the checkbox for **35 items**.
 - d. Select any of the following buttons:
 - Select **Add** to add the selected users and groups with access to visualizations in the project/shell.
 - Select **Cancel** to discontinue adding users and groups in the project/shell and return to the **Permissions** page.
7. In the **Permissions** page, select the following permissions for each user and group:
 - **Manage Content**: Select this permission to include additional visualization administrators in a project/shell. By default, they also get **Modify** and **View** permissions.
 - **Modify**: Select this permission to add users and groups who can edit visualizations created in a project/shell. By default, they also get the **View** permission.
 - **View (Default)**: Select this permission to add users and groups who can only view visualizations in a project/shell.
8. Select **Save** to add the selected users to the project/shell, and return to the **Visualizations** log.

Remove Users and Groups From Specific Visualizations

Project/Shell Administrators can remove users and groups from accessing specific visualizations available in a project/shell from the **Permissions** page.

Note

Contact your Company Administrator if you do not see users who should be included in a project/shell.

You must be the owner of the visualization or have the Manage permission enabled for visualizations in the specific project/shell to perform this task.

To remove shell-level users and groups from accessing specific visualizations:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.

3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. For a visualization in the **Visualizations** log (right pane), from the **Action** (⋮) menu, select **Permissions**.
5. In the **Permissions** page, select one or more users and groups by selecting the checkbox adjacent to the **Name** field of each user/group, and then select **Remove**.
6. In the **Remove Permissions** dialog box, select **Confirm** to proceed with the removal process, or select **Cancel** if you want to discontinue removing users and groups.
7. Select **Save**, and return to the **Visualizations** log.

Use Bulk Actions to Manage Permissions of Users and Groups For Specific Visualizations

The Bulk Actions menu on the Permissions page enables you to efficiently manage permissions for a large number of users and groups. You can add, remove, or update shell-level permissions for users and groups. For example, use the Bulk Actions menu options when you need to set visualization permissions for 75 users and 15 groups in a project/shell.

You must be the owner of the visualization or have the Manage permission enabled for visualizations in the specific project/shell to perform this task.

To set visualization permissions for project/shell-level users and groups in bulk:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), from the **Action** (⋮) menu, select **Permissions** for a visualization.
5. In the **Permissions** page, select the checkbox adjacent to the **User or Group Name** field for one or more users and groups.

Note

Select only those users and groups for whom you want to set a specific permission.

6. From the **Bulk Actions** menu, select any of the following menu options:
 - **Disable Manage Content:** Removes the **Manage Content** permission for users and groups selected in the previous step.
 - **Disable Modify:** Removes the **Modify** permission for users and groups selected in the previous step.
 - **Enable Manage Content:** Adds the **Manage Content** permission for users and groups selected in the previous step.
 - **Enable Modify:** Adds the **Modify** permission for users and groups selected in the previous step.
 - **Reset to Default:** Sets the permission to only **View**.

7. Select any of the following buttons to complete the task:
 - Select **Save** to confirm the permissions set for users and groups for this visualization, and return to the **Visualizations** log.
 - Select **Cancel** to discontinue this procedure, and return to the **Visualizations** log.

View and Export the Visualizations Audit Log From Projects/ Shells

The Audit Log displays a chronological list of actions performed on visualizations by all users/ groups in the Visualizations log of a project/shell. Project/Shell Administrators can view or download the audit log.

You must have Modify or Manage permissions enabled for visualizations in the specific project/ shell to perform this task.

To view and download the audit log of visualizations from a project/shell:

1. Sign in to Unifier with project/shell administration credentials.
2. Go to the specific project/shell tab, and switch to **Admin** mode. For example, select a tab called Vision Corporation.
3. In the left Navigator, select **Setup**, and then select **Visualizations**.
4. In the **Visualizations** log (right pane), from the **Action** menu, select **Audit Log**.
 - **Modified**: Date and time each change was made in the data source. The date and time format is based on the user's preferences.
 - **Action**: Type of change made to visualizations, such as, **Created**, **Added**, **Removed**, **Updated**, **Duplicate**, and so on.
 - **Modified By**: Name of the user who made the change in the data source.
5. To view the displayed column information in the ascending or descending order, select **Sort By**.
6. To download the audit log as a Microsoft Excel spreadsheet, select **Export** ().

Appendix

How Data Caching Works in Unifier

Review the following information to learn more about the benefits of data caching.

What is caching?

Caching is a performance optimization technique where system-generated query results are stored temporarily, so users can access data faster without running live queries every time.

How can it be enabled in Unifier data sources?

In Unifier, caching helps improve the responsiveness of visualizations that are based on business process (BP) records, cash flows, and CBS cost sheets. Enabling caching for these data sources will improve performance and reduce the load on real-time data retrieval.

Caching allows users to quickly access data for visualizations without waiting for live queries to run every time, making visualization content more responsive and user-friendly.

Note

Caching is available only for BP, cash flow, and CBS cost sheet data sources. Data views will not have caching enabled.

Why is caching provided or why enable caching?

It is recommended to enable caching to:

- Improve performance of visualizations by reducing query time
- Minimize system load and avoid unnecessary real-time queries for data that does not frequently change
- Provide faster user experience for content that is reviewed periodically rather than in real-time

How does caching work?

When caching is enabled for a data source, Unifier temporarily stores query results. When a visualization requests the same data, Unifier retrieves it from cache instead of re-executing the query.

How often is cached data refreshed?

Cached data is automatically refreshed every 4 hours after cache creation. Cache is created when a data source is published. This refresh ensures data is relatively current while optimizing performance.

Note

Based on system load , available resources and number of caches being refreshed or created in parallel, the exact time of refresh could be few minutes more from the scheduled 4 hours.

Benefits of caching

- Faster load times for dashboards and visualizations
- Reduced system load from frequent or repetitive queries
- Better user experience for content that does not require real-time updates

When to use cached data?

Caching is ideal for visualizations where:

- Data does not change frequently (for example, daily/weekly reviews)
- Content used to track overall trends or statuses, not real-time activities
- Users want quick access high-level data without waiting for live refresh.(periodical)

Examples of good use cases for cached data:

- Monthly or weekly project status dashboards
- Reports on cumulative transactions or approvals

Supported Data Element Sources for Business Processes

When you are in the process of creating a data source for visualizations, the following sources are supported for each business process in the [Data Elements: Select Data Elements for the Data Source](#) section .

Supported Business Process	Sources for Selecting Data Elements Include...
Simple BP	• Main Form • Workflow • Reference Pickers: BP Picker, Activity Picker, BP Data Picker, User Data picker, Shell Data Picker, and Line item Data Pickers • Attachments • Comments • Markups • Shell • Company • BP creators • All the pickers and BP creators and its reference pickers, and so on Refer to the UDR sources for Simple BPs to get exact sources shown in data elements.

Supported Business Process	Sources for Selecting Data Elements Include...
Shell Information	• Shell Information • Company • Shell • Shell/<Shell Type> • Shell/ <Single record BP name> • Shell/ <Shell Type> /<Reference Pickers like BP Picker, BP Data picker, Shell data pickers, user data pickers, Activity Pickers and so on> • Company • Shell/<Shell hierarchy>/<shell type> • Shell/<Shell hierarchy>/<shell type>/ <Reference Pickers like BP Picker, BP Data picker, Shell data pickers, user data pickers, Activity Pickers, and so on> Refer to the UDR sources for Shell Information data type to get exact sources shown in data elements.
Cost Business Process (Lineitem with CBS Code) - Generic classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency Refer to the UDR for the entire sources list.
Cost Business Process (Lineitem with CBS Code) - Transfer Classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency • Change commit with a reference commit Upper Form as source • Relevant SOV Sheet sources for the selected contract • QBT Upper Form record level data elements • BP Data Pickers • Line item data pickers • Activity pickers Refer to the UDR for entire sources list.

Supported Business Process	Sources for Selecting Data Elements Include...
Cost Business Process (Lineitem with CBS Code) - Base Commit Classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency • Change commit with a reference commit Upper Form as source • Relevant SOV Sheet sources for the selected contract • QBT Upper Form record level data elements • BP Data Pickers • Line item data pickers • Activity pickers Refer to the UDR for entire sources list.
Cost Business Process (Lineitem with CBS Code) - Change Commit Classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency • Change commit with a reference commit Upper Form as source • Relevant SOV Sheet sources for the selected contract • QBT Upper Form record level data elements • BP Data Pickers • Line item data pickers • Activity pickers Refer to the UDR for entire sources list.

Supported Business Process	Sources for Selecting Data Elements Include...
Cost Business Process (Lineitem with CBS Code) - General Spends Classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency • Reference commit Upper Form as source • QBT Upper Form record level data elements • BP Data Pickers • Line item data pickers • Activity pickers
Cost Business Process (Lineitem with CBS Code) - Payment Applications Classification	• Upper Form • Line items • Attachments • Comments • Linked records • Shell • Company • Workflow • CBS attributes • CBS Code related sources cost sheet • CBS Code related sources in base currency • CBS Code related sources in shell currency • Reference Commit sources • All data pickers data sources • All relevant SOV data sources

Supported Functions for Calculated Elements

The following functions are supported for calculated elements by the Data Source Creation Guided Process for visualizations:

String Functions

The following string functions can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
uppercase	Converts an array of strings to uppercase and concatenates them into one string.	uppercase(string1)	uppercase("hello", "world") returns "HELLOWORLD"

Function Name	Description	Syntax	Example
lowercase	Converts an array of strings to lowercase and concatenates them into one string.	lowercase(string1)	lowercase("HELLO", "WORLD") returns "helloworld"
concatenate	Concatenates an array of strings into a single string.	concatenate(string1, string2, ...stringN)	concatenate("hello", " ", "world") returns "hello world"
concat	Concatenates two strings into a single string.	concat(string1, string2)	concat("hello", "world") returns "helloworld"
substr	Extracts a substring from the given string starting at the specified position and optionally ending at the specified position.	substr(string, startIndex, endIndex)	substr("hello world", 0, 5) returns "hello"
size	Returns the length of the given string.	size(string)	size("hello") returns 5
strip	Removes leading and trailing whitespace from the given string.	strip(string)	strip(" hello world ") returns "hello world"

Mathematical Functions

The following mathematical functions can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
round	Rounds a number to the specified number of decimal places.	round(number, precision)	round(3.14159, 2) returns "3.14"
ceil	Rounds a number upwards to the nearest integer with the specified number of decimal places.	ceil(number)	ceil(3.14159) returns "4"
floor	Rounds a number downwards to the nearest integer with the specified number of decimal places.	floor(number)	floor(3.14159) returns "3"
add	Adds a series of numbers together.	add(number1, number2)	add("1", "2", "3") returns "6"
multiply	Multiplies a series of numbers together.	multiply(number1, number2)	multiply("2", "3", "4") returns "24"
subtract	Subtracts a series of numbers from the first number.	subtract(number1, number2)	subtract("10", "3", "2") returns "5"
divide	Divides the first number by the product of the rest of the numbers.	divide(number1, number2)	divide("10", "2", "2") returns "2.5"
pow	Raises the first number to the power of the second number.	pow(base, exponent)	pow("2", "3") returns "8"
max	Returns the maximum value from an array of numbers.	max(number1, number2, ...numberN)	max("1", "3", "2") returns "3"

Function Name	Description	Syntax	Example
min	Returns the minimum value from an array of numbers.	min(number1, number2, ...numberN)	min("1", "3", "2") returns "1"

Comparison Functions

The following comparison functions can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
lt	Checks if the first value is less than the second value.	lt(value1, value2)	lt("2", "3") returns "1" (true)
lte	Checks if the first value is less than or equal to the second value.	lte(value1, value2)	lte("2", "3") returns "1" (true)
eq	Checks if the first value is equal to the second value.	eq(value1, value2)	eq("2", "2") returns "1" (true)
gte	Checks if the first value is greater than or equal to the second value.	gte(value1, value2)	gte("3", "2") returns "1" (true)
gt	gt: Checks if the first value is greater than the second value.	gt(value1, value2)	gt("3", "2") returns "1" (true)

Date Functions

The following date functions can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
date	Extracts the day of the month from a given date string.	date(date)	date("2024-11-06") returns "6"
month	Extracts the month (0-11) from a given date string.	month(date)	month("2024-11-06") returns "10"
year	Extracts the year from a given date string.	year(date)	year("2024-11-06") returns "2024"
datediff	Calculates the difference between two dates in milliseconds.	datediff(date1, date2)	datediff("2024-11-06", "2024-11-05") returns "86400000"
dateadd	Adds a specified number of days to a date.	dateadd(date, days)	dateadd("2024-11-06", "5") returns "2024-11-11"
quarter	Returns the quarter (1-4) of the year for the given date.	quarter(date)	quarter("2024-12-16") returns 4
day	Returns the day of the month for the given date.	day(date)	day("2024-12-16") returns 16
weekday	Returns the day of the week (0-6) for the given date, where 0 is Sunday.	weekday(date)	weekday("2024-12-16") returns Monday
hour	Returns the hour (0-23) of the day for the given date.	hour(date)	hour("2024-12-16T15:30:00 Z") returns 15
minute	Returns the minute (0-59) of the hour for the given date.	minute(date)	minute("2024-12-16T15:30:00Z") returns 30

Conditional Function

The following conditional function can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
if	Returns a value based on a condition. If the first parameter is truthy, return the second parameter; otherwise, return the third parameter.	if(condition, valueIfTrue, valueIfFalse)	if(1==2, "Yes", "No") returns "No"

Special Functions

The following special functions can be used to create Calculated Elements:

Function Name	Description	Syntax	Example
today	Gets today's date with time as 00:00:00.	today()	today() returns the current date
now	Gets today's date with current time.	now()	now() returns the current date and time

Supported Conditions for Data Types

The following type of conditions are supported for specific data types of data elements by the Data Source Creation Guided Process for visualizations:

This Condition...	Supports the Data Type...
After	Date
Before	Date
Contains	String
Does not contain	String
Is empty	String, Date
Is not empty	String, Date
Is	Double, String, Integer, Boolean
Is not	Double, String, Integer, Boolean
Less than	Double, Integer
Less than or equal to	Double, Integer
More than	Double, Integer
More than or equal to	Double, Integer
On	Date
On or after	Date
On or before	Date
Not on	Date
Between	Double, Date, Integer
Not between	Double, Date, Integer