

Oracle® Fusion Cloud EPM

Administering Planning



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1

Creating and Running an EPM Center of Excellence

A best practice for EPM is to create a CoE (Center of Excellence).

An **EPM CoE** is a unified effort to ensure adoption and best practices. It drives transformation in business processes related to performance management and the use of technology-enabled solutions.

Cloud adoption can empower your organization to improve business agility and promote innovative solutions. An EPM CoE oversees your cloud initiative, and it can help protect and maintain your investment and promote effective use.

The EPM CoE team:

- Ensures cloud adoption, helping your organization get the most out of your Cloud EPM investment
- Serves as a steering committee for best practices
- Leads EPM-related change management initiatives and drives transformation

All customers can benefit from an EPM CoE, including customers who have already implemented EPM.

How Do I Get Started?

Click to get best practices, guidance, and strategies for your own EPM CoE: [Introduction to EPM Center of Excellence](#).

Learn More

- Watch the Cloud Customer Connect webinar: [Creating and Running a Center of Excellence \(CoE\) for Cloud EPM](#)
- Watch the videos: [Overview: EPM Center of Excellence](#) and [Creating a Center of Excellence](#).
- See the business benefits and value proposition of an EPM CoE in *Creating and Running an EPM Center of Excellence*.



2

Getting Started

Planning is a budgeting and forecasting solution that integrates financial and operational planning processes and improves forecast accuracy.

Related Topics

- [About Planning](#)
The Planning application is a related set of dimensions and dimension members used to meet a set of planning needs.
- [Application Features](#)
Key features in the Planning application enable you to reduce budgeting and planning cycles and improve forecast reliability.
- [Launching the Application](#)
- [About the Home Page](#)
After you create the business process, the Home page is the launch point for accessing your business process tasks.
- [Considerations When Using the Application Interface](#)
- [Managing Application Access](#)

About Planning

The Planning application is a related set of dimensions and dimension members used to meet a set of planning needs.

Each Planning application has its own accounts, entities, scenarios, and other data elements.

See this guide for Planning administration tasks, including:

- Creating, deleting, and managing a Planning application
- Creating forms, task lists, and menus
- Managing currency conversions and exchange rates
- Identifying the review and approval process, requirements, and participants, and managing the budgeting process

For information about Planning Modules and Strategic Modeling, see Introduction in *Administering Planning Modules*.

Tutorials



Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal

Get an introduction to Planning.

Learn How

 [Planning Overview](#)

Your Goal	Learn How
Get an introduction to: <ul style="list-style-type: none"> • A typical planning process using Planning • Planning, budgeting, and forecasting workflow concepts and tools • The benefits of planning using multiple scenarios • The budget submission process Log on to Planning, navigate Planning, and access Planning in Oracle Smart View for Office.	 Planning Process Overview
	 Navigating Planning

Application Features

Key features in the Planning application enable you to reduce budgeting and planning cycles and improve forecast reliability.

The application:

- Facilitates collaboration, communication, and control across multidivisional global enterprises
- Provides a framework for perpetual planning, to manage volatility and frequent planning cycles
- Decreases the total cost of ownership through a shorter roll out and implementation phase, and easier maintenance for an application
- Enhances decision-making with reporting, analysis, and planning
- Promotes modeling with complex business rules and allocations
- Integrates with other systems to load data

Videos


Your Goal	Watch This Video
Get an introduction to the key features in Planning.	 Overview: Tour of Planning in EPM Enterprise Cloud

Links to topics about the key application features described in the video:

- [Designing Dashboards](#)
- [Managing Sandboxes](#)
- [Editing Dimension Properties](#)
- Using Ad Hoc for Data Entry and Analysis
- [Defining Valid Intersections](#)
- Moving Data from One Cube to Another Cube Using Smart Push in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*
- Using Your Own Excel Formulas in Planning

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn which options are available for integrating with Planning.	 Getting Started with Integration for Oracle EPM Cloud Planning

Launching the Application

This topic describes the unique launch URLs that are used to launch Oracle Enterprise Performance Management Cloud applications.

A Service Administrator is responsible for providing the unique URLs to users.

Launching EPM Standard Cloud Service and EPM Enterprise Cloud Service Applications

Customers provisioned to EPM Standard Cloud Service and EPM Enterprise Cloud Service instances will use URLs similar to the following to access their environments:

- **Production environment URL:** `https://epm-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`
- **Test environment URL:** `https://epm-test-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`

For example, for EPM Cloud environments provisioned with identity domain `exampleDoM` in `exampleDC` data center, the URLs may be as follows:

- **Production environment:** `https://epm-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`
- **Test environment:** `https://epm-test-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`

This is a change from previous versions of EPM Cloud where each application used a separate context to access environments. See Sample EPM Cloud URLs in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Launching a Planning and Budgeting Cloud Application

To launch a Planning and Budgeting Cloud application, enter the following URL in a new browser window:

```
https://Oracle PBCS service name/HyperionPlanning;
```

For example:

```
https://testnew1-testnew1.pbc.us1.oraclecloud.com/HyperionPlanning;
```

For information about enabling access to application artifacts on mobile devices and for considerations when using the application, see [Managing Application Access](#).

Troubleshooting

For help with resolving login issues, see *Resolving Login Issues in Oracle Enterprise Performance Management Cloud Operations Guide*.

For help with resolving issues with Oracle Enterprise Performance Management Cloud environments that are down, see *Dealing with Down Environments in Oracle Enterprise Performance Management Cloud Operations Guide*.

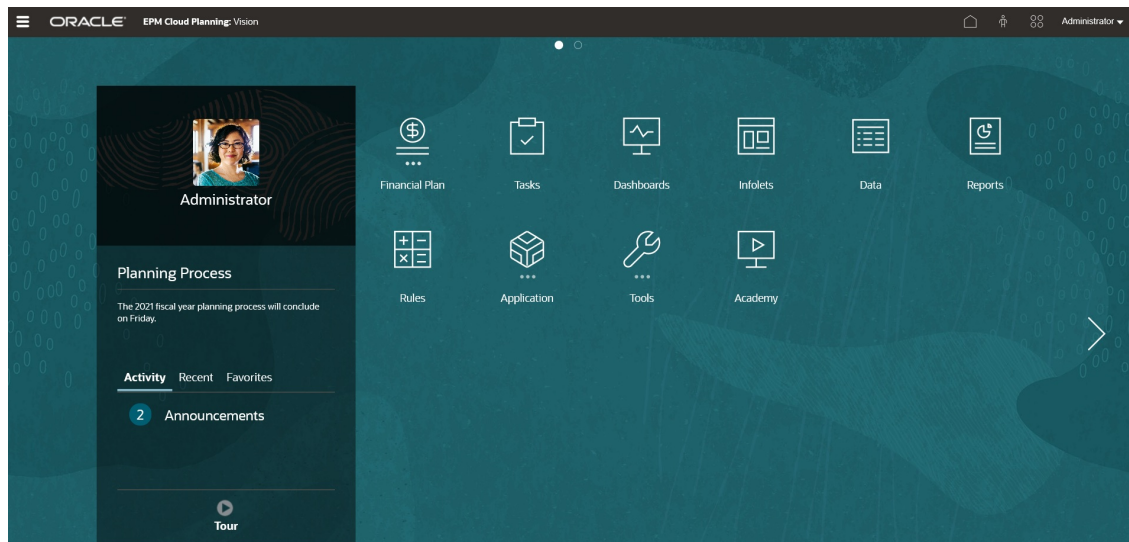
About the Home Page

After you create the business process, the Home page is the launch point for accessing your business process tasks.

The interface provides an intuitive user experience and an overview for quick access to commonly used functions. For example, users can access their tasks, work with data, approve budgets, view reports, and control settings. Service Administrators can manage and customize the business process, create forms, dashboards, and infolets, import and export data and metadata, schedule jobs, define valid intersections, make announcements, and create cross-environment connections.

All newly created or re-created Oracle Enterprise Performance Management Cloud services, business processes, and applications use the Redwood Experience as the default theme. You can change the general look and feel of your EPM Cloud environment on the **Appearance** page. On the **Appearance** page, you can enable the Redwood Experience or choose a classic theme. Each theme provides different background colors, icon styles, and so on. You can also add a branding logo and background images to the Home page. To change the general look and feel of your environment, see [Customizing Your Display](#).

Example Home Page Displaying the Redwood Experience








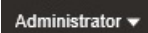


Global Header

The global header is the area that stretches across the top of the user interface. It contains navigation icons as well as access to accessibility settings and the **Settings and Actions** menu. You can also switch between navigation flows from the global header.



Parts of the global header from left to right:

Global Header Part	Description
	The Navigator icon opens the Navigator menu, which serves as a sitemap of the business process and displays links to all of the business process pages to which you have access.
<div style="border-left: 2px solid #0070C0; padding-left: 10px;"> <p> Note:</p> <p>Some of the links in the Navigator menu are available only if you're accessing the business process from the desktop.</p> </div>	
	Click the Oracle logo to return to the Home page while working elsewhere in the business process. You can display a custom logo instead of the Oracle logo by selecting a Logo Image on the Appearance page.
	The name of the current business process. You can hide the business process name by selecting No for the Display Business Process Name option on the Appearance page.
	The Home icon refreshes the Home page or returns you to the Home page while working elsewhere in the business process.
	Click the Accessibility Settings icon to enable accessibility features.
	If you belong to multiple groups or if a navigation flow is assigned to a role, click the navigation flow icon to switch navigation flows at runtime.
	Click your user name to access the Settings and Actions menu.

Work Area

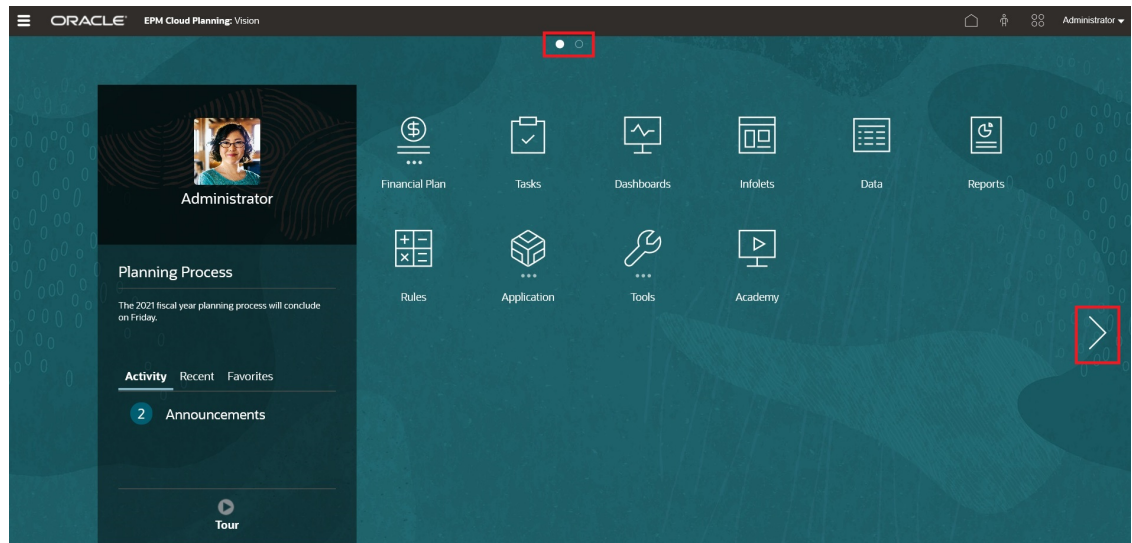
The work area on the Home page displays either a theme-based background image or a custom background image. The icons that display in the work area link you to each functional area of the business process to which you have access; for example, **Financials**, **Dashboards**, **Approvals**, and **Data**. The three dots above an icon label denotes that the icon opens a grouping of sub-icons, called a cluster.

The **Academy** icon links you to a variety of resources about using the business process.

To replace the theme-based background image in the work area with a custom background image, select **Background Image** on the **Appearance** page.

Infolet Navigation

If your business process uses infolets to show high-level, essential information, you can explore them by clicking the dots that appear beneath the global header. Arrows are also available on the sides of the Home page to help you navigate easily between the Home page and infolet dashboard pages.




Announcements Panel

The Announcements Panel displays your user name and profile picture (if set), any system announcements entered by the Service Administrator, and helps you track your activity.



- You can set your profile picture to display at the top of the Announcements panel of the Home page. To set your profile picture, click **Tools**, and then **User Preferences**.
For more information, see Setting Your Profile Picture in *Working with Planning*.
- **Activity**: Summarizes system announcements (the most recent announcement, sorted by effective date, appears at the top) and lists your open tasks. Click **Announcements** to flip the panel and view announcements. Click **Tasks Due Today** to flip the panel and view your tasks.
- **Recent**: Displays a list of links to recently visited forms and dashboards (up to 15 items). Clicking a link will launch the item in a secondary window. Clicking the star next to a link will tag it as a favorite.
- **Favorites**: Displays a list of links to forms or dashboards that were tagged as favorites, and prevents them from being overwritten. Click a link in **Favorites** to launch the item in a

secondary window. To add items to **Favorites**, click **Recent** to view your recent user activity, and then click the star to the right of the item.

- : Click the **Tour** icon to launch a video about key features in the business process.

Videos

Your Goal	Watch This Video
Explore the default Redwood Experience theme.	 Overview: Announcing EPM Cloud's new Redwood Theme
Learn how to customize the interface to streamline workflow.	 Overview: Customizing Workflow in Enterprise Performance Management Cloud

Considerations When Using the Application Interface

Note the following considerations when using the application interface:

- The interface supports only Landscape mode for iPad and Android tablets.
- The user experience on tablets is better on iPad than on Android devices.
- Oracle recommends using the Safari web browser with iPads and Google Chrome with Android devices.
- If you use Windows 10, the interface might appear in a magnified (or zoomed in) state if your scaling isn't set to 100%. Windows 10, by default, might have 125% or 150% scaling.
- A PDF viewer is required to view reports on the tablet. Oracle recommends the Adobe PDF viewer, but it can be opened in Kindle or Polaris Office on Android devices or a similar application on the iPad.
- For information on copying and pasting data between Microsoft Excel and application web forms, see [Copying and Pasting Data Between Microsoft Excel and Application Web Forms](#).

Managing Application Access



Related Topics

- [Enabling Access to Application Artifacts On Mobile Devices](#)
- [About Cell Formatting](#)
- [Copying and Pasting Data Between Microsoft Excel and Application Web Forms](#)
- [About Instant Save](#)
- [About Autosave](#)

Enabling Access to Application Artifacts On Mobile Devices

To work with artifacts such as forms, task lists, and business rules on mobile devices, Service Administrators must enable access to those artifacts for users.

To enable access to application artifacts on mobile devices:

1. From the Home page, click **Navigator** , and then under **Setup**, click **Access Simplified Interface**.
2. In **Access Simplified Interface**, click  to launch the forms, tasks, and rules selector.
3. In the **Selector**, select the forms, tasks, and rules you want to enable for mobile device access, and then click **OK**.
4. Back in **Access Simplified Interface**, select the **Forms**, **Tasks**, and **Rules** tabs to view the artifacts that are enabled for mobile device access.

About Cell Formatting

You can apply either the formatting saved in Oracle Smart View for Office or the formatting set up in Planning for the form.

To select which formatting to apply:

1. In the form, click **Actions**, and then **Apply**.
2. Click:
 - **Cell Styles**: To use Planning's formatting
 - **Custom Styles**: To use the formatting saved in Smart View

Copying and Pasting Data Between Microsoft Excel and Application Web Forms

To copy and paste data from Microsoft Excel:

1. In Excel, highlight the data in one cell or in a range of cells, and press Ctrl+C to copy the data onto the clipboard.
2. Highlight and select the target cell or cells in the application Web form, and then press Ctrl+V.
3. When the Clipboard helper is displayed, press Ctrl+V again. The data is pasted to the Clipboard helper.
4. Click **Paste** to paste the data into the application Web form.

About Instant Save

When users work in forms and they click **Save**, their new or changed data is saved instantly—without a confirmation message—if the structure of the form hasn't changed. For example, instant save works automatically unless any of these options is selected for the form (because they change the structure of the form):

- **Suppress missing data**
- **Suppress missing blocks**
- A business rule is selected to launch on **Save** (other than the default Calculate Form and Calculate Currencies business rules).

About Autosave

If the **Grid Property** option **Enable Autosave** is selected for a form, when users move out of a cell, their changes are automatically saved, with no prompt or message. Cell values are aggregated to their parents, and the affected cells display with a green background. Also, with this option selected, users can use Ctrl+Z to undo changes.

For autosave to work, the following suppress options must be turned off because they change the structure of the form:

- **Suppress missing data**
- **Suppress missing blocks**

For more information on this option and its dependent option, **Run Form Rules on Autosave**, see [Setting Form Grid Properties](#).

3

Creating a Planning Application

Create an application based on your planning needs.

Depending on the type of Oracle Enterprise Performance Management Cloud service you've purchased, there are two approaches to creating an application:

- EPM Standard Cloud Service or EPM Enterprise Cloud Service application. See [Creating an EPM Cloud Service Application](#).
- Planning and Budgeting Cloud application. See [Creating a Planning and Budgeting Cloud Application](#).

Creating an EPM Cloud Service Application

Create an Oracle Enterprise Performance Management Cloud Service application based on your planning needs.

Related Topics

- [EPM Cloud Services](#)
- [Creating an EPM Enterprise Cloud Service Application](#)
- [Creating an EPM Standard Cloud Service Application](#)
- [What Applications Can I Migrate to EPM Standard Cloud Service and EPM Enterprise Cloud Service?](#)
- [EPM Cloud URL](#)
- [Enabling Strategic Modeling for Custom Applications](#)
You can enable Strategic Modeling for use with existing Custom and Planning Modules applications.
- [Product Name and Terminology Changes](#)

EPM Cloud Services

Oracle has two Oracle Enterprise Performance Management Cloud services: Oracle Enterprise Performance Management Standard Cloud Service (EPM Standard Cloud Service) and Oracle Enterprise Performance Management Enterprise Cloud Service (EPM Enterprise Cloud Service).

For information about the Cloud services, see Available EPM Cloud Subscriptions in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Videos

Your Goal

Learn the differences between EPM Standard Cloud Service and EPM Enterprise Cloud Service.

Watch This Video



[Overview of EPM Standard Cloud Service and EPM Enterprise Cloud Service](#)

Your Goal

Learn how to set up Planning in Oracle EPM Standard Cloud and Oracle EPM Enterprise Cloud.

Watch This Video



[Setting Up Planning in Cloud EPM](#)

Creating an EPM Enterprise Cloud Service Application

The landing page is your starting point for creating an application and for viewing overview videos that help you get started.

The screenshot displays a grid of eight application categories on the EPM Enterprise Cloud Service landing page. Each category is represented by an icon, a title, a brief description, a 'SELECT' button, and a 'Take a quick tour' link.

- Planning:** Drive accurate, integrated plans - from long-range planning to budgeting and line of business planning that incorporates best practices.
- Financial Consolidation and Close:** Optimize the financial close - comprehensive consolidation and close, including close process orchestration, on a single reporting platform.
- Account Reconciliation:** Streamline Account Reconciliation - automate, comprehensively address risk, and efficiently manage the global account reconciliation process.
- Profitability and Cost Management:** Manage and drive profitability - efficiently model profitability by segment and complex costing of shared services.
- FreeForm:** Create flexible and fully customizable applications for reporting and planning. Migrate your On-Prem Essbase cubes for use in EPM Cloud.
- Tax Reporting:** Align tax reporting with corporate financial reporting - seamless transparency between tax and finance with a strong compliance framework.
- Narrative Reporting:** Satisfy internal and external reporting requirements - collaborative narrative and regulatory reporting with interactive dashboards.
- Enterprise Data Management:** Manage change with enterprise data management - enterprise data governance, change data visualization and hierarchy management.

Each subscription to the EPM Enterprise Cloud Service allows you to create one application. Click **SELECT** under the application description to see available options.

About Making Selections to Create an Application

The EPM Enterprise Cloud Service landing page presents the applications that you can create.

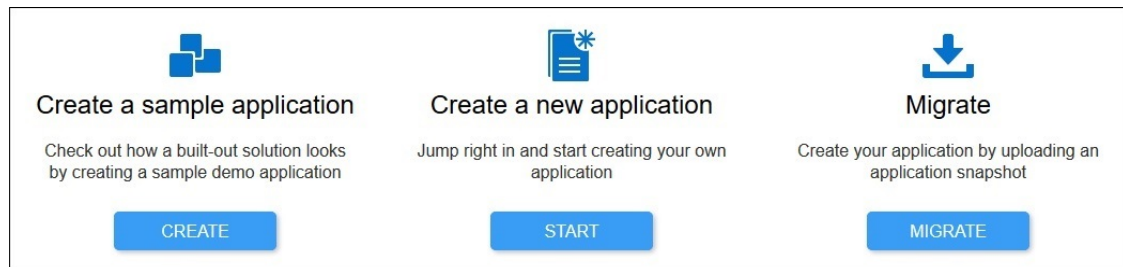
Note:

After you initiate the creation of an application, you cannot return to the landing page. If wish to return to the landing page to create a different application, you must first reset your environment to its original state. See *Switching to a Different Business Process in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

You have three options to create an application:

- Create a sample application
- Create a new application
- Use an existing snapshot to create an application

These options are displayed on an application-specific landing page similar to the following illustration:



Creating a Planning Application

On the landing page, click **SELECT** under **Planning** to view available options for creating a Planning application.

- **Create a sample application:** Click **CREATE** to automatically create the Vision sample application, which is a valuable tool to explore the planning and budgeting process. See [Creating a Sample Application](#).
- **Create a new application:** Click **START** to create a Planning application. You can create a Custom, FreeForm, Planning Modules, Sales Planning, Strategic Workforce Planning, or Predictive Cash Forecasting application to meet your business needs.

- **Custom:** Supports most planning and budgeting requirements through complex business logic, such as business rules and allocations. Select this option if your requirements would necessitate a high degree of application customization. See [Creating a Standard Application](#).

Additionally, when you create an application of type Custom, you have the option to enable Strategic Modeling for use with your application. You do this by selecting the **Strategic Modeling** option on the **Create Applications: Details** screen.

You can enable Strategic Modeling for use with your custom applications even if you do not enable it when creating the application. To enable Strategic Modeling for an existing EPM Enterprise Cloud Service custom application. See [Enabling Strategic Modeling for Custom Applications](#).

Note:

You can create a single currency or multicurrency application. Multicurrency custom applications are created using simplified multicurrency.

- **Free Form:** Supports a FreeForm application and does not require Currency, Entity, Scenario, and Version dimensions and their member hierarchies. FreeForm applications are created using an Essbase outline file (OTL) from an on-premises deployment to import dimensions and members. The outline file name can have a maximum of eight characters because the file name is used to name the cube of the FreeForm application. See [Creating a FreeForm App](#).

For information on loading data into a FreeForm application, see Loading Data to a Free Form Application in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

- **Modules:** Sets up the cubes required for Capital, Financials, Projects, Workforce and Strategic Modeling. Choose this option to create an application that supports best

practices and industry standard functionality. See *Creating an Application in Administering Planning Modules*.

 **Note:**

You can create a single currency or multicurrency application. Multicurrency applications are created using simplified multicurrency.

- **Sales Planning.** For more information about creating a **Sales Planning** application, see Implementation Checklist and Creating an Application in *Administering Sales Planning*.
- **Strategic Workforce Planning.** For information about creating a **Strategic Workforce Planning** application, see Implementation Checklist and Creating an Application in *Administering and Working with Strategic Workforce Planning*.
- **Cash Forecasting.** For information about creating a cash forecasting application, see Setting Up Your Application in *Administering Predictive Cash Forecasting*.
- **Migrate:** Click **MIGRATE** to create a custom Planning application from a snapshot that you previously uploaded to the environment. See What Applications Can I Migrate to EPM Standard Cloud Service and EPM Enterprise Cloud Service? in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for prerequisites and snapshot compatibility.

 **Note:**

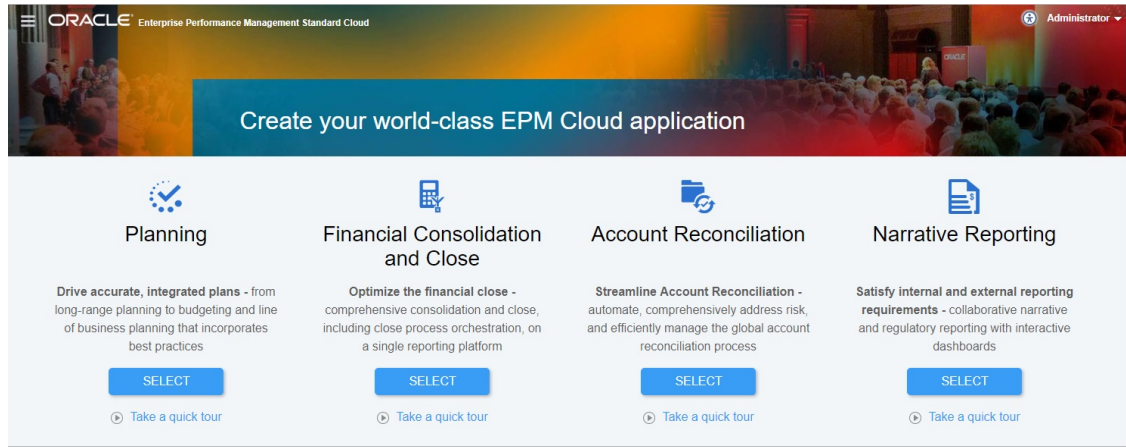
You cannot enable Strategic Modeling for your custom application after importing a snapshot created from an application for which Strategic Modeling is not enabled. Strategic Modeling is automatically enabled if the snapshot contains Strategic Modeling artifacts.

See these topics in *Administering Migration for Oracle Enterprise Performance Management Cloud*:

- Backing up Artifacts and Application in *Administering Migration for Oracle Enterprise Performance Management Cloud*
- Uploading Archives to the Service in *Administering Migration for Oracle Enterprise Performance Management Cloud*
- Importing Artifacts and Application from a Snapshot in *Administering Migration for Oracle Enterprise Performance Management Cloud*

Creating an EPM Standard Cloud Service Application

The landing page is your starting point for creating an application and for viewing an overview video tour to help you get started.



Each subscription to the EPM Standard Cloud Service allows you to create one application.

About Making Selections to Create an Application

The EPM Standard Cloud Service landing page presents the applications that you can create.

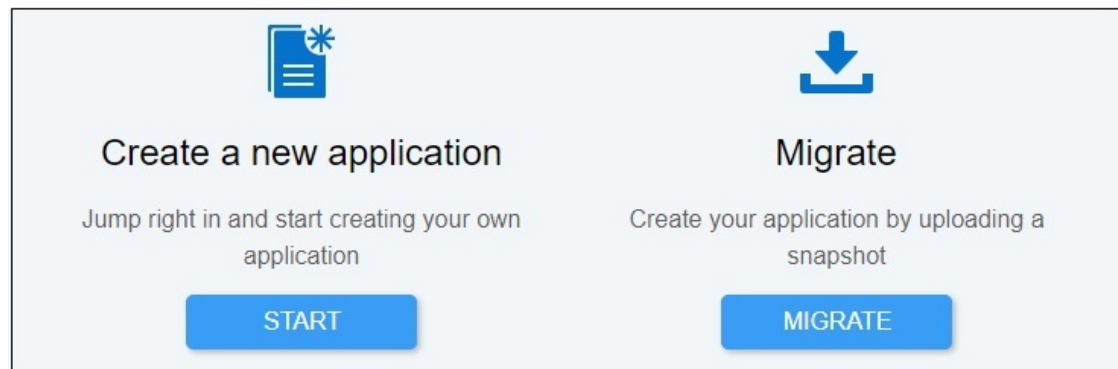
Note:

After you initiate the creation of an application, you cannot return to the landing page. If wish to return to the landing page to create a different application, you must first reset your environment to its original state. See *Switching to a Different Business Process in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

You have two options to create an application:

- Choosing your own settings to create the application
- Using an existing snapshot to create the application

These options are displayed on an application-specific landing page similar to the following illustration:



Creating a Planning Application

On the landing page, click **SELECT** under **Planning** to view available options for creating a Planning application.



Note:

You can have only one custom input cube and one reporting cube in the application.

- **Create a new application:** Click **START** to create a Module-based Planning application. See *Setting Up Your Application in Administering Planning Modules*.
- **Migrate:** Click **MIGRATE** to import a Standard Planning application from a snapshot that you previously uploaded to the environment. See [What Applications Can I Migrate to EPM Standard Cloud Service and EPM Enterprise Cloud Service?](#) for prerequisites and snapshot compatibility.

See these topics in *Administering Migration for Oracle Enterprise Performance Management Cloud*:

- Backing up Artifacts and Application in *Administering Migration for Oracle Enterprise Performance Management Cloud*
- Uploading Archives to the Service in *Administering Migration for Oracle Enterprise Performance Management Cloud*
- Importing Artifacts and Application from a Snapshot in *Administering Migration for Oracle Enterprise Performance Management Cloud*

What Applications Can I Migrate to EPM Standard Cloud Service and EPM Enterprise Cloud Service?

The following applications provide an option to migrate a snapshot to create an application in EPM Standard Cloud Service and EPM Enterprise Cloud Service environments.

- Planning
- Financial Consolidation and Close
- Account Reconciliation
- Profitability and Cost Management
- Tax Reporting
- Data Management



Note:

Tax Reporting, Data Management, and Profitability and Cost Management applications are not available in EPM Standard Cloud Service.

These Migration Scenarios are Always Supported

- You can migrate a EPM Standard Cloud Service or EPM Enterprise Cloud Service application. For example, after creating a snapshot of an EPM Standard Cloud Service application, you recreated the service. You can use the snapshot to recreate the EPM Standard Cloud Service application.
- You can migrate a snapshots created in a EPM Standard Cloud Service or EPM Enterprise Cloud Service test environment to a production environment, and conversely.
- For legacy environments, migration of snapshots from test to production environments, and conversely, is supported if both environments use the same Oracle Essbase version. You can also migrate from a legacy environment that uses Non-Hybrid Essbase to an environment that uses Hybrid Essbase, but not conversely. See About Essbase in EPM Cloud in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for more information.

These Migration Scenarios are Never Supported

- Migrating a snapshot from EPM Standard Cloud Service or EPM Enterprise Cloud Service to a legacy environment.
- Migrating snapshots taken from environments that use Hybrid Essbase to environments that use Non-Hybrid Essbase.
- Migrating a snapshot from EPM Standard Cloud Service, EPM Enterprise Cloud Service or legacy environments to On-premises deployments.

Migration Paths for Legacy EPM Cloud Snapshots

Legacy snapshot refers to a snapshot taken from an Oracle Enterprise Performance Management Cloud environment that is not an EPM Standard Cloud Service or EPM Enterprise Cloud Service environment. By default, these environments are configured with an Oracle Essbase version that does not support hybrid cubes (referred to as Non-hybrid Essbase).

Because the following legacy environments allow you to enable Hybrid BSO cubes, they may already be configured with an Essbase version that supports hybrid cubes (referred to as Hybrid Essbase).

- Enterprise Planning and Budgeting Cloud
- Planning and Budgeting Cloud with Plus One option

See About Essbase in EPM Cloud in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for detailed information on Essbase use in EPM Cloud.

For legacy environments, a self-service operation using the `recreate` EPM Automate Utility command is available to upgrade Non-Hybrid Essbase to Hybrid Essbase. After upgrading Essbase, you can enable Hybrid BSO cubes in Enterprise Planning and Budgeting Cloud.

Note:

You can upgrade legacy Planning and Budgeting Cloud environments to use Hybrid Essbase. However, you cannot enable the use of Hybrid BSO cubes in these environments.

Table 3-1 Migration Scenarios for Legacy EPM Cloud Snapshots

Legacy Snapshot Source	Available Migration Paths	Unavailable Migration Paths
Planning and Budgeting Cloud (Non-Hybrid Essbase)	<ul style="list-style-type: none"> EPM Enterprise Cloud Service Custom Legacy Planning and Budgeting Cloud (Non-Hybrid Essbase) Legacy Planning and Budgeting Cloud (Hybrid Essbase) 	<ul style="list-style-type: none"> EPM Enterprise Cloud Service (Planning Modules, FreeForm) EPM Standard Cloud Service Planning
Planning and Budgeting Cloud with Plus One option (Hybrid or Non-Hybrid Essbase)	<ul style="list-style-type: none"> EPM Enterprise Cloud Service Planning Modules Legacy Planning and Budgeting Cloud with Plus One option (Hybrid or Non-Hybrid Essbase) 	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (FreeForm, Custom) Legacy Planning and Budgeting Cloud (Non-Hybrid Essbase)
Enterprise Planning and Budgeting Cloud (Non-Hybrid Essbase)	<ul style="list-style-type: none"> Legacy Enterprise Planning and Budgeting Cloud (Non-Hybrid or Hybrid Essbase) EPM Enterprise Cloud Service (Planning Modules) 	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (Custom, FreeForm)
Enterprise Planning and Budgeting Cloud (Hybrid Essbase)	<ul style="list-style-type: none"> Legacy Enterprise Planning and Budgeting Cloud (Hybrid Essbase) EPM Enterprise Cloud Service (Planning Modules) 	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (Custom, FreeForm) Legacy Enterprise Planning and Budgeting Cloud (Non-Hybrid Essbase)
<ul style="list-style-type: none"> *On-Premises 11.2.x Planning On-Premises 11.1.2.4 Planning On-Premises 11.1.2.3 Planning 	<ul style="list-style-type: none"> EPM Enterprise Cloud Service Custom Legacy Planning and Budgeting Cloud 	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (Planning Modules, FreeForm) Legacy Enterprise Planning and Budgeting Cloud (Non-Hybrid Essbase)
*On-Premises 11.2.x Planning that uses Essbase 21c cannot be migrated to EPM Cloud.		

Migration Paths for EPM Standard Cloud Service and EPM Enterprise Cloud Service Snapshots

All EPM Standard Cloud Service and EPM Enterprise Cloud Service environments that use Oracle Essbase use the newest version of Essbase that is capable of supporting Hybrid Cubes. By default, Custom Planning, Planning Modules, and FreeForm applications use Hybrid BSO cubes. See About Essbase in EPM Cloud in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Table 3-2 Migration Scenarios for EPM Standard Cloud Service and EPM Enterprise Cloud Service Snapshots

Snapshot Source	Available Migration Paths	Unavailable Migration Paths
EPM Standard Cloud Service Planning	<ul style="list-style-type: none"> EPM Standard Cloud Service Planning EPM Enterprise Cloud Service Planning Modules 	<ul style="list-style-type: none"> EPM Enterprise Cloud Service (FreeForm, Custom) Legacy Planning and Budgeting Cloud Legacy Enterprise Planning and Budgeting Cloud
EPM Enterprise Cloud Service Custom Planning	EPM Enterprise Cloud Service Custom Planning	<ul style="list-style-type: none"> EPM Enterprise Cloud Service EPM Enterprise Cloud Service (FreeForm, Planning Modules) Legacy environments (including those using Hybrid Essbase)
EPM Enterprise Cloud Service Planning Modules	EPM Enterprise Cloud Service Planning Modules	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (Custom, FreeForm) Legacy environments (including those using Hybrid Essbase)
EPM Enterprise Cloud Service FreeForm	EPM Enterprise Cloud Service FreeForm	<ul style="list-style-type: none"> EPM Standard Cloud Service EPM Enterprise Cloud Service (Custom, Planning Modules) Legacy environments (including those using Hybrid Essbase)

Migrating Planning Snapshots

These Planning migration scenarios are supported.

Source	Target
EPM Standard Cloud Planning Application	Modules-based EPM Enterprise Cloud Application
Legacy Planning and Budgeting Cloud Application	Custom Application in EPM Enterprise Cloud
Enterprise Planning and Budgeting Cloud or Planning and Budgeting Cloud with Plus One Option Application	Modules-based application in EPM Enterprise Cloud
On-Premises Planning Application (11.1.2.3, 11.1.2.4, or 11.2.x*)	EPM Standard Cloud or EPM Enterprise Cloud Application

* 11.2.x On-Premises Planning applications that use Essbase 21c cannot be migrated to EPM Cloud

 **Note:**

- Legacy application refers to an application from the newest update of a non-EPM Enterprise Cloud Service or EPM Standard Cloud Service subscription.
- Migration of applications from legacy Planning and Budgeting Cloud, Enterprise Planning and Budgeting Cloud, and Planning and Budgeting Cloud with Plus One option creates standard BSO cubes, which you may convert to Hybrid cubes.
- For instructions on migrating on-premises Planning applications to Oracle Enterprise Performance Management Cloud, see Migrating On-Premises Applications to EPM Cloud in *Administering Migration for Oracle Enterprise Performance Management Cloud*.

 **Note:**

Attempts to import Groovy-based business rules and templates into a business process that does not support Groovy will fail. For example, EPM Standard Cloud Service planning and financial consolidation and close business processes do not support Groovy-based business rules. Import of business rules and templates exported from an application that supports Groovy, for example, from an EPM Enterprise Cloud Service Planning business process, into EPM Standard Cloud Service Planning business process will fail.

EPM Cloud URL

Customers provisioned to EPM Standard Cloud Service and EPM Enterprise Cloud Service instances will use URLs similar to the following to access their environments:

- **Production environment URL:** `https://epm-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`
- **Test environment URL:** `https://epm-test-idDomain.epm.dataCenter.oraclecloud.com/epmcloud`

For example, for Oracle Enterprise Performance Management Cloud environments provisioned with identity domain `exampleDoM` in `exampleDC` data center, the URLs may be as follows:

- **Production environment:** `https://epm-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`
- **Test environment:** `https://epm-test-exampleDoM.epm.exampleDC.oraclecloud.com/epmcloud`

A Service Administrator is responsible for providing the unique URLs to users.

This is a change from previous versions of EPM Cloud where each application used a separate context to access environments. See Sample EPM Cloud URLs in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Enabling Strategic Modeling for Custom Applications

You can enable Strategic Modeling for use with existing Custom and Planning Modules applications.

To enable Strategic Modeling for an EPM Enterprise Cloud Service Custom application:

1. Sign into the Custom or Planning Modules application as a Service Administrator.
2. Click **Application** and then **Overview**.
3. From **Actions**, select **Enable Strategic Modeling**.
4. If you are using navigation flows, complete a step to activate Strategic Modeling artifacts:
 - Reload Navigation Flows.
 - Sign out and then sign in again.

To enable Strategic Modeling in a Planning Modules application, see [Enabling Strategic Modeling in Planning Modules](#).

To set up Strategic Modeling, see [Setting up Strategic Modeling](#).

Product Name and Terminology Changes

EPM Standard Cloud Service and EPM Enterprise Cloud Service have introduced some product name and terminology changes which may not be reflected in the user assistance collaterals, such as guides, learning paths, videos, screen shots, and online help.

Table 3-3 Product Name and Terminology Changes

Old Terminology	New Terminology
Planning and Budgeting Cloud	Planning
Enterprise Planning and Budgeting Cloud	Planning
Enterprise Planning and Budgeting Cloud business processes; for example, Workforce	Planning Modules
Enterprise Performance Reporting Cloud	Narrative Reporting
Cloud Service	Business process

Creating a Planning and Budgeting Cloud Application

Create a Planning and Budgeting Cloud application based on your planning needs.

Related Topics

- [About Creating a Planning and Budgeting Cloud Application](#)
- [Selecting the Application Type](#)
- [Creating a Reporting Application](#)
- [Creating a Sample Application](#)
- [Creating a Standard Application](#)
- [Choosing Setup Options](#)
- [Planning and Budgeting Cloud URL](#)
- [Taking the Product Tour](#)

About Creating a Planning and Budgeting Cloud Application


Before you create your Planning and Budgeting Cloud application, we've provided some guidelines and best practices to help you determine your requirements and design your application so that it meets your business needs:

- See [Best Practices for Designing Your Application](#).
- Click **Take a quick tour**. For more information, see [Taking the Product Tour](#).

To create an application:


1. Log in and select **Start** under **Finance**, and then select **Planning & Budgeting**.
2. Select the type of application you want to create. See [Selecting the Application Type](#).
 - [Creating a Reporting Application](#)
 - [Creating a Sample Application](#)
 - [Creating a Standard Application](#)
 - [Choosing Setup Options](#)

Videos

Your Goal	Watch This Video
Learn how to create a Planning and Budgeting Cloud application.	 Creating Planning Applications in Oracle Planning and Budgeting Cloud

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Get an introduction to the Oracle Enterprise Performance Management Cloud Services, instances, business processes, and features, and to learn how to create Planning business processes in EPM Cloud Service: Standard and Enterprise subscriptions.	 Creating the Planning Business Process

Selecting the Application Type

Select an application type:

- **Standard:** Builds advanced applications for any business process. Select from two options:
 - **Sample:** Quickly and automatically creates a demo application using the sample Vision application that's provided. See [Creating a Sample Application](#).
 - **New:** Builds an advanced custom application. See [Creating a Standard Application](#).
- **Enterprise:** Builds custom applications or uses predefined business processes to create applications for Financials, Workforce, Capital, and Projects. You can also build a Strategic Modeling solution. See *Administering Planning Modules*.

- **Reporting:** Builds a basic application that you can expand over time. See [Creating a Reporting Application](#).

Creating a Reporting Application

A Reporting application is a basic application with one cube and the core components that you need to get up and running quickly. If you later decide that you need more complex business logic, you can convert a Reporting application into a Standard or Enterprise application.

A Reporting application:

- Consists of one cube
- Allows you to add more dimensions
- Allows MDX member formulas only
- Doesn't support business rules, map reporting, copy data, copy versions, exchange rates, or currency conversion
- Can be converted into a Standard or Enterprise application

Note:

- To convert a Reporting application into a Standard application, see [Converting to a Standard Application](#).
- To convert a Reporting application into an Enterprise application, see [Converting a Standard or Reporting Application to an Enterprise Application](#).

Default dimensions and characteristics for a Reporting application:

- Account: Only the root member is provided.
- Entity: Only the root member is provided.
- Period: Members are created based on the answers provided during setup. Users can add an alternate hierarchy later. The Beginning Balance and Year Total periods are provided.
- Years: Number of years, history, and future years are broken up based on the values chosen during application creation. An All Year parent is provided. More years can be added later. The default number of years is 10.
- Scenario: Five scenarios are provided: Plan, Actual, Forecast, Variance, and Variance Comments.
- Version: Three versions are provided: Base, What If, and Final. Hierarchical versions are allowed, for example, Base (child member)+What If (child member)=Final (parent member).

Note:

Generic members aren't added to the dimensions.

To create a Reporting application:

1. Click **Reporting**.

2. Name your application and enter a description.

 **Note:**

Ensure that you adhere to the application naming restrictions outlined in [Naming Restrictions](#).

3. The application provides setup options that you can select to help you create the initial framework for your planning process. If you need help deciding which options to choose, see [Choosing Setup Options](#).
4. Review the summary screen, and, if the selections you made are correct, click **Create**.

After you create the application, populate it by performing these steps:

- Import metadata using the import feature. See [Importing Metadata](#).
- Populate data by importing data from your source system. See [Importing and Exporting Data](#).

Creating a Sample Application

Planning provides a Sample application, called Vision, that lets you quickly create an application with artifacts and data.

 **Note:**

To create a Standard application, see [Creating a Standard Application](#).

To automatically create the Sample application, click **Standard**, and then click **Sample**. When application creation is completed (this will take several minutes), you'll see an **Application created successfully** message.

To manage the application after it's created, see [Managing Applications](#).

Creating a Standard Application

A Standard application is an advanced application with two cubes and the option to add more cubes. Complex business logic, such as business rules and allocations, is supported. You can't convert a Standard application into a Reporting application.

A Standard application:

- Allows you to add additional dimensions
- Enables sandboxes for the block storage cubes that are created when you create the application. (You can also enable sandboxes for custom cubes when you create the cube.)
- Supports custom calendars (up to weeks of the month)
- Supports business rules
- Allows member formulas
- Can't be converted into a Reporting application
- Can be converted into an Enterprise application

 **Note:**

To convert a Standard application into an Enterprise application, see [Converting a Standard or Reporting Application to an Enterprise Application](#).

To create a Standard application:

1. Click **Standard**.
2. Click **New**.
3. Name your application and enter a description.

 **Note:**

Ensure that you adhere to the application naming restrictions outlined in [Naming Restrictions](#).

4. The application provides setup options that you can select to help you create the initial framework for your planning process. For descriptions of the setup options, see [Choosing Setup Options](#).
5. Review the summary screen, and, if the selections you made are correct, click **Create**.

After you create a Standard application, populate it by performing these steps:

- Import application metadata using the import feature. See [Importing Metadata](#).
- Populate application data by importing data from your source system. See [Importing and Exporting Data](#).

Choosing Setup Options

Related Topics

- [Setting Up the Calendar and Task Flow Type](#)
Set up the calendar and task flow type for the application. You can set the period frequency, start and end years, fiscal period, and enable rolling forecasts. Then you can designate which task flow type to use.
- [Setting Up Currencies](#)
Specify the main currency for the application, and establish whether the application supports multiple currencies.
- [Customizing the Cube Names](#)
Specify custom names for the input (block storage) and reporting (aggregate storage) cubes used in the application.
- [Setting Up Custom Dimensions and Metadata](#)
Categorize data values into dimensions. You can have up to 32 total dimensions.

Setting Up the Calendar and Task Flow Type

Set up the calendar and task flow type for the application. You can set the period frequency, start and end years, fiscal period, and enable rolling forecasts. Then you can designate which task flow type to use.

The calendar establishes the application's period frequency, start and end years, first month of fiscal year (if monthly) or the start date of the first fiscal period (if weekly or quarterly), and lets you enable a rolling forecast and period duration.

For the fiscal year, set the fiscal year first month and specify whether the fiscal year starts from the same calendar year or the previous calendar year. You can later set up calculations based on the calendar year, for example, using formula expressions. When setting up formulas for an application, consider that formula expressions such as [TPDate] and [FirstDate] produce different results if the application starts in the same calendar year or previous calendar year.

On this screen you can also choose a **Task Flow Type** for the application:

- **Task List:** Task lists are a classic feature which guides users through the planning process by listing tasks, instructions, and end dates.

For more information about task lists, see [Administering Task Lists](#).

- **EPM Task Manager:** This is the default option for new applications. EPM Task Manager provides centralized monitoring of all tasks and provides a visible, automated, repeatable system of record for running a application.

For more information about EPM Task Manager, see [Administering Tasks with Task Manager](#).

 **Note:**

You can switch the **Task Flow Type** after application creation from **Task List** to **Task Manager**. However, you cannot migrate existing task lists to Task Manager, and you cannot switch back to task lists after enabling Task Manager. If you want to continue using classic Task Lists, select the **Task List** option during application creation. For information about enabling Task Manager and to review other important considerations about switching, see [Enabling Task Manager from within Planning](#).

To set up the calendar and task flow type:

1. Select the **Period Frequency**:
 - **Monthly**
 - **Weekly**
 - **Quarterly**
 - **Custom**
2. Select the **Start and End year** for the application.
3. Specify fiscal year information based on the **Period Frequency**:
 - For **Monthly**, select the first month of the fiscal year.

If you create an application with a first month of something other than January, you must also select the **Fiscal Year Start Date**. The selection of this parameter is critical

for the correct creation of the Years dimension and the underlying calculations for periods. For more information, see [About the Calendar](#).

- For **Weekly** and **Quarterly**, specify the start date of the first fiscal period
4. If you set the frequency to **Monthly**, select a **Weekly Distribution** option: **Even**, **445**, **454**, or **544**.

Weekly distribution sets the monthly distribution pattern, based on the number of fiscal weeks in a month. This selection determines how data in summary time periods spreads within the base time period. When users enter data into summary time periods, such as quarters, the value is distributed over base time periods in the summary time period.

If you select a weekly distribution pattern other than **Even**, the application treats quarterly values as if they were divided into 13 weeks and distributes weeks according to the selected pattern. For example, if you select **5-4-4**, the first month in a quarter has five weeks, and the last two months in the quarter have four weeks.

5. Decide whether to enable rolling forecasts and set the period duration. See [About Rolling Forecasts](#).

Rolling Forecast is available only if the start month is January.

6. Select a **Task Flow Type** for the application:

- **Task List:** Guides users through the planning process by listing tasks, instructions, and end dates.

For more information about task lists, see [Administering Task Lists](#).

- **EPM Task Manager:** This is the default option for new applications. **EPM Task Manager** provides centralized monitoring of all tasks and provides a visible, automated, repeatable system of record for running an application.

For more information about EPM Task Manager, see [Administering Tasks with Task Manager](#).

About the Calendar

For 12 month calendars where you select something other than January for the **First Month of Fiscal Year**, you must also select the **Fiscal Year Start Date**. The selection of this parameter is critical for the correct creation of the Years dimension and the underlying calculations for periods.

Fiscal Year Start Date options:

- **Same Calendar Year.** Set the fiscal year (FY) to start with the current calendar year (CY).
 For example, in a 12-month calendar, selecting the year 2024 with a starting period of Jun creates the starting year as FY24, defined as Jun-CY24 to May-CY25.
- **Previous Calendar Year.** Set the fiscal year (FY) to start with the previous calendar year (CY).

For example, in a 12-month calendar, selecting the year 2024 with a starting period of Jun creates the starting year as FY24, defined as Jun-CY23 to May-CY24.

The following table provides examples of how the **First Month of Fiscal Year** and the **Fiscal Start Year** options affect the calendar for the application, assuming the Fiscal Start Year is 2022.

Table 3-4 Examples of First Month of Fiscal Year and Fiscal Year Start Date Calendar Options for 12 Month Calendars

First Month of Fiscal Year	Fiscal Year Start Date	Period - Year	Years Dimension
January	Not applicable. This option is not available when January is selected as the first month of the fiscal year.	Jan-CY22 to Dec-CY22	FY22
July	Same Calendar Year	Jul-CY22 to Jun-CY23	FY22
July	Previous Calendar Year	Jul-CY21 to Jun-CY22	FY22
February	Same Calendar Year	Feb-CY22 to Jan-CY23	FY22
February	Previous Calendar Year	Feb-CY21 to Jan-CY22	FY22
December	Same Calendar Year	Dec-CY22 to Nov-CY23	FY22
December	Previous Calendar Year	Dec-CY21 to Nov-CY22	FY22

Setting Up Currencies

Specify the main currency for the application, and establish whether the application supports multiple currencies.

To set up the currency:

1. During application setup, select the main currency for the application.
2. Specify whether the application supports more than one currency, and if so, then select one of the following multiple currency options:
 - **Standard:** Creates the Currency dimension and a hidden dimension called HSP_Rates to store the exchange rates. See [About Standard Multicurrency](#). Not available for Module and Custom application types.
 - **Simplified:** Creates the Currency dimension and additional accounts are added to store the exchange rates. See [About Simplified Multicurrency](#).

After the application is created, you can't change this option. Multiple currency support is available for level 0 members, regardless of base currency. The same currencies and exchange rates are used across cubes.

About Simplified Multicurrency

In a Simplified multicurrency application, a single Currency dimension is added to the application and exchange rates are stored in the Accounts dimension.

Here is the workflow for working with a Simplified multicurrency application:

1. During application creation, select a main currency against which the entire application will refer to when a currency conversion is done.
2. After the application is created, in the Currency dimension, create a Currency member for each currency in the application. The Currency members you create are listed under **Input Currencies**. Data is entered or loaded in an input currency and data can be entered or

loaded into multiple input currencies for any given combination; for example Entity and Account.

3. While creating a Currency member, you can specify whether the currency you're adding is also a reporting currency. Select the **Reporting Currency** option to make a currency a reporting currency.

 **Note:**

Each application has one main currency, and is allowed to have many reporting currencies.

4. You can assign security to the Currency dimension to make Currency dimension members read-only based on user access. To enable security for the Currency dimension, click the **Edit Dimension Properties** tab, and then select **Apply Security**. See [Editing Dimension Properties](#).
5. For Simplified multicurrency applications with a custom aggregate storage cube, you must enable the Account, Period, and Currency dimensions for the custom aggregate storage cube. All dimensions in default aggregate storage cubes are enabled by default, but you must enable these dimensions manually for custom aggregate storage cubes. To enable Account, Period, and Currency dimensions for custom aggregate storage cubes, edit dimension properties for each dimension and select to enable them for the aggregate storage cube. See [Editing Dimension Properties](#).
6. Refresh the application. The **Calculate Currency** rule converts the input values from the current currency to the reporting currencies. Exchange rates are calculated from the input currency to the main currency of the application. Triangulation is used to calculate from an input currency to all reporting currencies.
7. Enter exchange rate data to the exchange rate form that was automatically created and seeded during application creation. The exchange rate form is called **Exchange Rates to Main Currency**; for example, **Exchange Rates to USD**. Enter the exchange rates by period for all input currencies against the main currency. You must enter the values across all intersections under which you wish to see the converted data.

 **Note:**

You can also export the Exchange Rate Template to input and load currency exchange rates. See [Importing Exchange Rates for a Simplified Multicurrency Application](#).

Exchange rates are stored in the Account dimension and they contain the ending and average rates used to convert foreign currencies into the main currency. These rates are in FX Rates-Average and FX Rates-Ending. These rates are locked and can't be deleted. Users with view permissions can view the rates for the currencies on the **Exchange Rates to Main Currency** form.

 **Note:**


- You can't move an Account member that is under an Exchange Rates account out from under Exchange Rates because the Exchange Rates account is locked. To move an Exchange Rate member out of the Exchange Rates account, you must delete the member and then re-add it to the new location.
- The No Entity member is a locked member that is used for storing currency exchange rates. No modifications are allowed to the No Entity member in Simplified multicurrency applications, and you cannot create a shared member from No Entity.

8. There are two ways to view Reporting currency values:

- **Calculate Currencies** rule on a form: On the data input form, add the **Calculate Currencies** business rule. To add this rule, click the **Action** menu, and then select the **Business Rule** option. You can use the **Run After Save** or **Run Before Load** business rule properties. When data is entered for the input currency and the Calculate Currency rule is executed, the currency is converted and displays in the reporting currency form.

 **Note:**

- Ensure that any forms created have the same intersection as that of the **Exchange Rates to Main Currency** form, with respect to Scenario, Version, and Year.
- Ensure that both the input and converted forms have the same structure, the only difference between the forms being the currency.
- Associate the **Calculate Currencies** rule to the forms where the input is being provided. You can set up forms to automatically run these rules when data in the form is saved. If not, users must manually launch the rule to convert data from one currency to the reporting currencies. After the rule is run, view the converted values by opening the form for which you want to see the converted values or by selecting that currency's member from the Currency dimension.
- The **Calculate Currencies** rule is associated with forms in a block storage cube. Simplified currency conversion isn't supported for aggregate storage cubes.
- You can restrict currency calculations in forms and batch currency rules based on the range defined for the scenario time period. In **Application Settings**, select **Yes** for **Enable currency calculation based scenario time period**.

- Create and launch a custom rule: To create a custom rule, from the Home page, click **Navigator** , and then under **Create and Manage**, click **Currency Conversions**. For **Currency**, enter the reporting currency. Then enter the **Scenario**, **Version Type**, and **Version** details. Specify the **Years** for which you want to calculate the currency conversion rule. Click **Save**. To launch the rule, from the Home page, click **Rules**. To the right of the business rule, click **Launch**.


 **Note:**

If you've enabled currency calculation based on the scenario time period, you cannot specify **Years** and you can only specify one **Scenario**.

 **Note:**


The behavior of the currency conversion script (whether to honor calculate currencies based on scenario definition) is dependent on the application setting at the time of script generation. See [What Application and System Settings Can I Specify?](#)

Videos

Your Goal	Watch This Video
Learn how to set up multiple currencies in Planning.	 Setting Up Multiple Currencies in Planning

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to automatically translate data to reporting currencies in Planning forms.	 Automatically Translating Data to Reporting Currencies in Planning

About Standard Multicurrency

If you're familiar with Planning, then you're familiar with the Standard multiple currency approach. This is the approach that your current Planning applications use.

Selecting the standard multiple currency option during application creation creates two additional dimensions called Currency and HSP_Rates. You can add more currencies as members of the Currency dimension. The HSP_Rates dimension is a hidden dimension that stores exchange rates. This dimension includes these members and others that store currency rates:

- Hsp_InputValue: Stores data values
- Hsp_InputCurrency: Stores currency types for data values

For more information, see [Hsp_Rates Dimension for Standard Multicurrency Applications](#).

For an account with a currency data type, you can choose from one of the following exchange rate types:

- Historical
- Average
- Ending

For more information, see [Data Type and Exchange Rate Type](#).

Based on the exchange rate type, a user-defined attribute (UDA) is associated with the account that is used in the currency calculation. You can associate an entity to a currency. For example, when you associate the entity USA to the currency USD, the local currency in the form for the USA entity is USD.

You can create multiple exchange rate tables, each representing a different business scenario. Each scenario can be associated with only one exchange rate table.

You can run a calculate currency rule that generates the rule at runtime based on the members included in the form. This rule can be set to run when the form is saved or loaded, based on the requirement.

For more information about using the standard multiple currency approach, see [Administering Dimensions](#).

Customizing the Cube Names

Specify custom names for the input (block storage) and reporting (aggregate storage) cubes used in the application.

You can customize the names for the cubes during application creation only. If no cube names are specified during application creation, then the input (block storage) cube name defaults to "Plan1" and the reporting cube (aggregate storage) name defaults to the application name.

Caution:

After a cube is added, you can't rename it or delete it.

To customize the cube names:

1. In **Name of Input Cube**, enter a name for the data entry (block storage) cube.
2. In **Name of Reporting Cube**, enter a name for the reporting (aggregate storage) cube.

At this point in the application creation process, you can also enable sandboxes. For information about sandboxes, see [Managing Sandboxes](#).

Setting Up Custom Dimensions and Metadata

Categorize data values into dimensions. You can have up to 32 total dimensions.

The application includes two custom dimensions: Account and Entity. Use Account and user-defined dimensions to specify data to gather from users. Use Entity to model the flow of planning information in the organization and establish the plan review path.

If you selected the Standard multicurrency option during application creation, the application includes the Hsp_Rates dimension for storing exchange rates. This dimension includes these members and others that store currency rates:

- Hsp_InputValue: Stores data values
- Hsp_InputCurrency: Stores currency types for data values

For detailed information about custom dimensions and Hsp_Rates, see [Editing Dimensions in the Simplified Dimension Editor](#).

 **Note:**

You have the option to either manually enter member names or you can set up Account, Entity, and custom dimension members by importing from metadata files. To import from metadata, you first export the metadata for each dimension to a flat file and then, on this window, import their metadata by browsing to that flat file. For instructions on creating the flat file, see [Creating the Metadata Import File](#).

To set up custom dimensions:

1. To add a dimension or rename a prefilled dimension, to the right of **Dimension Type** in the **Dimension Name** column, enter the name of the dimension.

Dimension names can have up to 80 characters and can include spaces.

2. For each dimension, enter its member names.

For example, for the Version dimension, you could enter `Budget2014`. You can add members later.

The **Number of Records** column displays the number of members either entered or in the flat file.

3. **Optional:** To import metadata for Account, Entity, or a custom dimension from a flat file, click **Browse**.

Use this method for importing smaller dimensions (for example, 1,000 members or fewer); use the Import and Export method (described in [Importing and Exporting Data and Metadata](#)) for incremental updates or for loading larger dimensions.

For instructions on creating flat files, see [Creating the Metadata Import File](#). If the file has so many members that application performance would be impacted, an error displays and the number of records displayed is 0 (zero).

4. Click **Create**.
5. If you have more metadata to load, continue to [Importing Metadata](#).

Planning and Budgeting Cloud URL

To launch the Planning and Budgeting Cloud application, enter the following URL in a new browser window:

```
https://Oracle PBCS service name/HyperionPlanning;
```

For example:

```
https://testnew1-testnew1.pbcs.us1.oraclecloud.com/HyperionPlanning;
```

For information about enabling access to application artifacts on mobile devices and for considerations when using the application, see [Managing Application Access](#).

Taking the Product Tour

Clicking **Take a quick tour** links you to useful information about getting started with the application. It also provides best practices for determining your requirements and designing

your application, tutorials for administering the application, and links you to the Help Center where the documentation library is located.

To take the product tour:

1. Click **Take a quick tour**.
2. Click the buttons at the bottom of the screen to page through the tour screens.

Managing Application Ownership

The Service Administrator who creates the application is auto-assigned the Application Owner function. When a Service Administrator with the Application Owner function is deleted or when the user's predefined role assignment is downgraded (for example, from Service Administrator to Power User), the Application Owner function is reassigned to the next available Service Administrator user (in alphabetical order) for the application, and then role of the current Application Owner user is deleted or changed to sync up with Access Control.

If there are no available Service Administrators, then the Service Administrator user is not deleted or the role is not changed. Oracle will contact you with next steps to resolve the issue.

Any Service Administrator can use **System Settings** to take over or reassign the Application Owner role to any available Service Administrator.

See [What Application and System Settings Can I Specify?](#)

4

Creating a FreeForm App

FreeForm apps use an open dimensional cube construct allowing you to create cubes with any dimension combination you need.

Related Topics

- [Understanding FreeForm](#)
- [FreeForm App Sources](#)
- [Important Considerations for FreeForm Apps](#)
- [Creating a FreeForm Application Type](#)
- [Frequently Asked Questions \(FAQ\) About FreeForm](#)

Understanding FreeForm

FreeForm enables you to create an application with the cubes and dimensions of your choice without being constrained by the cube and dimension limitations imposed by standard applications. With FreeForm, you can model and build your own cubes while preserving the ability to leverage business process functionalities.

FreeForm can be accessed using Oracle Smart View for Office or Oracle Enterprise Performance Management Cloud screens; they support Groovy scripts for custom functions, and business rules for calculations.

You can create applications with multiple cubes or you can create an application with a single cube and then add more cubes later (up to 12 cubes total).

Note:

The following features are not available in FreeForm because these features require the provided Scenario, Version, Period, and Year dimensions to be present:

- Predictive Planning
- Auto-Predict
- IPM Insights

In FreeForm, the Scenario, Version, Period, and Year dimensions can be defined as custom dimensions.

In addition, the following features are not available in FreeForm:

- Sandboxes
- Approvals
- Task Manager








About Multi-Cube FreeForm Apps


- The maximum number of custom dimensions allowed in a FreeForm app is 26.
- Cubes can share dimensions or have standalone dimensionality.
- All dimensions can be custom; or native account, period, and/or entity dimensions can be inherited by the cubes.
- Cross-cube data maps, Smart Push, and Copy Data support are available for FreeForm app types.

Multi-cube FreeForm apps are constrained by these existing business process assumptions:

- Members must be unique across all the cubes within FreeForm.
- Governors are applicable at the application level and not at the cube level.
- The input outlines must not be enabled to allow duplicate member names.

Videos

Your Goal	Learn How
Get an introduction to FreeForm.	 Introduction to FreeForm Apps in Cloud EPM
Create FreeForm apps from on-premises Oracle Essbase outline (OTL) files and snapshots.	 Creating FreeForm applications from on-premises Essbase outline files and snapshots
Create multi-cube FreeForm apps with an Essbase outline	 Creating Multi-Cube FreeForm Apps from Essbase Outlines
Create FreeForm apps with a Hybrid BSO cube	 Creating FreeForm Applications with a Hybrid BSO Cube
Create FreeForm apps with an ASO or reporting cube	 Creating FreeForm Applications with a Reporting/ASO Cube
Create multi-cube FreeForm apps with a BSO or ASO cube	 Creating Multi-Cube FreeForm Apps from BSO and ASO Cubes
Learn how to create FreeForm apps using an Excel template. Using the Excel template, you learn how to define application properties, manage cubes, create dimensions and members, attributes, access permissions, and load data into the FreeForm application.	 Creating Multi-Cube FreeForm Applications with an Excel Template - Part 1

Your Goal	Learn How
<p>Learn how to update FreeForm apps using an Excel template and verifying changes in the web interface. After creating your FreeForm application using an Excel template, learn how you can use the same template to make modifications to dimensions, members, substitution variables, and security. Then, in the Planning web interface, assign Application Management options, review the application properties and definition, and the data you imported.</p>	 <p>Creating Multi-Cube FreeForm Applications with an Excel Template - Part 2</p>

FreeForm App Sources

You can build FreeForm apps by creating dimensions using the application creation wizard. Alternatively, you can use an outline (OTL) file or snapshot from an on-premises release 11.1.2.4.xxx (or later) single cube Oracle Essbase application to create a FreeForm app.

When you use an Essbase cube OTL file or Essbase application snapshot as the source for a FreeForm app, Account, Period (time), and Entity (country) dimensions are created and mapped automatically. Additionally, Version and Scenario dimensions of the Essbase application are created as custom dimensions. As a result, out of the box Workflow functionality is not supported in FreeForm apps.

Service Administrators build a FreeForm app using the application creation wizard or these sources:

- **An Outline file from on-premises release 11.1.2.4.xxx (or later) single cube Essbase application**

You may use an OTL file from an on-premises release 11.1.2.4.xxx (or later) single cube Essbase application to create the structure of the FreeForm app. New cubes may be added or created for this FreeForm app at a later time.

Because the OTL file name is assigned to the cube created for the FreeForm app, the file name must be eight characters or less. Longer file names will cause the process to fail.

Generally, the OTL file is available in the `EssbaseServer/essbaseserver1/app/<app_Name>` directory within your on-premises Essbase deployment.

Because the OTL file does not contain application data, you must extract Essbase data to a file. Use MaxL, Essbase Studio, or another tool to export data from an Essbase application. The data must be exported in an Essbase data file format.

After creating the application, import the extracted data, selecting Essbase as the source type. You can import from a locally stored data file or from a file that was uploaded to the Oracle Enterprise Performance Management Cloud inbox. For detailed instructions, see [Importing Data](#).

- **An application snapshot from an on-premises release 11.1.2.4.xxx (or later) single cube Essbase application**

This option simplifies application creation by migrating an existing Essbase application snapshot (ZIP file) that was created using Migration. This process automates dimensions loading, substitution variables creation, calculation scripts conversion as graphical rules, and data load. New cubes may be added or created for this FreeForm app at a later time.

Important Considerations for FreeForm Apps

 **Note:**

Do not attempt to create FreeForm apps by importing Oracle Essbase Migration snapshots into an Oracle Enterprise Performance Management Cloud environment. Importing snapshots using Migration is supported only for snapshots created from a previous FreeForm app.

- Data maps and other multi-cube features are unavailable if you create a single cube FreeForm app using the application creation wizard.
- Essbase snapshots with Custom Defined Functions (CDF) and CDF references cannot be used to create FreeForm apps.
- Make sure that the OTL file or Essbase application snapshot that you are using does not contain objects with system restricted names; for example, a member named `FY02` in the Year dimension. You must rename or remove such restricted names before generating the OTL file or snapshot that you plan to use to create the application. See [Naming Restrictions](#).
- Ensure that the OTL file or Essbase application snapshot that you are using does not have member and alias names that are longer than 80 characters. If member and alias names are longer than 80 characters, you must remove or shorten them or the import will not be successful. See [Naming Restrictions](#).
- If the OTL file that you are using contains Year Total and Beginning Balance members, the Beginning Balance member must be the first child under the Period dimension, and Year Total must be the second child under Period dimension. These members require special handling and can be moved to appropriate positions by modifying the .csv files in the Migration snapshot before restoring the snapshot.
- If you plan to use an OTL file or snapshot stored in your EPM Cloud environment as the source, upload the file before starting the application creation process.
Use the `uploadFile` EPM Automate Utility command or Migration to upload the OTL file or snapshot to an EPM Cloud environment.
- Imported data may not be editable in FreeForm apps. At times, the data is set as Read-only.
- Member outline must be unique in the application.
- If you create a FreeForm app by importing an OTL or snapshot, you can add or create new cubes for this FreeForm app at a later time.
- If you create a FreeForm app by adding new cubes in the application creation wizard, an Essbase cube OTL or Essbase application snapshot cannot be imported into this FreeForm app at a later time to create new cubes.

Do not use the following reserved words to name dimensions and members in FreeForm:

Table 4-1 Reserved words that should not be used as member names in FreeForm

Reserved words			
BU Version_1	Users	Attribute Dimensions	HSP_Entity

Table 4-1 (Cont.) Reserved words that should not be used as member names in FreeForm

Reserved words			
ConsolidatedData	Groups	Default	HSP_Period
BaseData	Calendars	Task Lists	HSP_Version
SandBoxData	Currencies	Menus	HSP_XCRNCY
Super User	Predefined	CalcMgrRules	HSP_Years
Strategic Planner	FX_Tables	CalcMgrRulesets	HSP_View
Service Administrator	Forms	CalcMgrVariables	HSP_Metric
CalcMgrTemplates	Aliases	HSP_Rates	
Root	Cubes	HSP_Scenario	
Dimensions	Planning Units	HSP_Account	

Creating a FreeForm Application Type

Before you create a FreeForm app, review the important considerations and the reserved words that should not be used as member names in FreeForm apps. See [Important Considerations for FreeForm Apps](#).

Service Administrators can create a FreeForm application type in the following ways:

- Importing an Essbase outline file or snapshot of a single Essbase cube.
- Creating an application with a single cube (you can keep it to a single cube or add more cubes later)
- Creating an application with multiple cubes

To create a FreeForm application type:

1. On the EPM Enterprise Cloud Service landing page, click **SELECT** under **Planning**.
2. On the Planning landing page, click **START** under **Create a new application**.
3. Enter a **Name** and **Description** for the application.
4. From **Application Type**, select **Free Form**.
5. For **Application Setup**, select from the following options:
 - **Import Essbase OTL/LCM:** Creates a FreeForm app from an on-premises Essbase outline file or snapshot. Only one outline or snapshot is allowed. To continue creating a FreeForm app using this application setup option, see [Creating a FreeForm App Using an Outline File or Snapshot](#).
 - **Create Cubes:** Creates a FreeForm app that uses one or more cubes. Use this option to manually create FreeForm apps based on your own models using custom dimensions. During this process, you can map the custom dimensions that you want to use as Entity, Period, and Account dimensions, and you can also add other custom dimensions to support your model. To continue creating a FreeForm app using this application setup option, see [Creating a FreeForm App Using the Application Creation Wizard](#).

 **Note:**

If creating a FreeForm app with the **Create Cubes** option in the application creation wizard, an Oracle Essbase outline file or snapshot can no longer be imported into this application. You can still create new cubes at a later time using the web interface. If creating a FreeForm app using the **Import Essbase OTL/LCM** option in the application creation wizard, new cubes can be created for this application at a later time using the web interface.

Creating a FreeForm App Using an Outline File or Snapshot

To continue creating a FreeForm app using an outline file or snapshot:

1. Select the location of the source OTL file or the Oracle Essbase application snapshot:
 - Select **Local** to access the source OTL file or snapshot from the computer from which you are currently accessing Oracle Enterprise Performance Management Cloud.
For **Import File**, click **Choose File** and then select the source OTL file or snapshot.
 - Select **Inbox** to access the source OTL file or snapshot from your EPM Cloud environment.
From **Select One**, select the source OTL file or snapshot.

2. Click **Next**.

3. Review application information and then click **Create**.

When application creation is complete, EPM Cloud Home page is displayed.

4. Make sure that errors were not reported during application creation.
 - Open the Jobs console by clicking **Application**, and then **Jobs**
 - Verify that the **Create Database** and **Process Outline** activities finished without errors. Correct any reported errors.
5. **Optional:** If you created the application using an OTL file as the source, import application data. See [Importing Data](#).

If you used a snapshot as the application source, the application creation process automatically imports data.

6. Create application users in identity domain and assign predefined roles as needed. See *Managing Users and Roles in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.
7. Set up access permissions as needed. See [Setting Up Access Permissions](#).

Creating a FreeForm App Using the Application Creation Wizard

To continue creating a FreeForm app using the application creation wizard:

1. For **No. Of Cubes**, select the number of cubes you'd like to use to create your FreeForm app. You can add up to 12 cubes now, or you can start with one cube and then add more cubes later on the Application Overview page.

 **Note:**

If you create a single cube FreeForm app, data maps and other multi-cube features are unavailable until you add cubes to the FreeForm app. Also for a data map to work there needs to be at least one block storage (BSO) cube, and the source for the data map needs to be a BSO cube.

2. In **Cube Name**, enter a name for each cube, maximum eight characters.
3. Select **Is ASO**, if the cube is an aggregate storage cube. If the **Is ASO** checkbox is cleared, then the cube is a Hybrid block storage cube.

 **Note:**

Reporting applications that use ASO cubes, generally, store data in aggregate views and can handle a higher number of dimensions than BSO without adversely affecting performance.

4. Click **Next**.

The **Create Dimensions** page is displayed. From this screen, you can create up to three dimensions and assign one each to Account, Entity, and Period default dimension types. Additional dimensions can be added later in the web interface.

 **Note:**

FreeForm apps do not require standard dimensions. You can create an application with only custom dimensions containing members of your choice. The dimensions you create and its structure are not governed by the constraints imposed on standard Planning application dimensions.


5. In **Create Dimensions**, create and map default application dimensions. Complete a step:
 - To create dimensions and map them to default dimension types, select the **Enabled** check box and then type in dimension names.

 **Note:**

Enabling dimensions is not automatic. Just like custom applications, you must manually enable dimensions for FreeForm apps. You can do this now, or you can enable them later.

- To create a dimension and assign a dimension type, select the check box in a row and then type in a dimension name.
- To create a shell application, do not change anything in this screen.
You can add and map dimensions to shell applications after the application creation process is complete.

6. Click **Next**.

7. In **Review**, verify the settings that you selected and then click **Create**.
The application creation process may take a few minutes.
 8. In the Application Creation Status screen, click **OK**.
The Planning Home page is displayed.
 9. **Optional:** Create custom dimensions, if needed.
 - a. Click **Application**, then **Overview**, and then select the **Dimensions** tab.
 - b. For **Cube**, select a cube that you created for your FreeForm app or select **All**.
 - c. Click **Create**.
 - d. Complete the dimension details for each dimension you want to add. For descriptions of the dimension properties, see [Editing Dimension Properties](#).
For FreeForm applications, you can select the dimension type. Dimension types can include:
 - Account
 - Entity
 - Period
 - Custom
 Notes about dimension type:
 - A dimension type is not listed if you've already created it (for Account, Entity, Period) or if you've exceeded the maximum number of dimensions (for Custom).
 - You can't edit the dimension type after you've created the dimension.
 Select **Enabled** to indicate whether the dimension is to be used in this cube.
-  **Note:**
Enabling dimensions is not automatic. Just like custom applications, you must manually enable dimensions for FreeForm apps.
- e. Click **Done**.
 - f. Click **Action** and then **Refresh Database** to refresh the cube.
10. **Optional:** Import application data. See *Importing Data in Administering Planning*.
 11. **Optional:** If you created a shell application with a view to import a snapshot, access Migration, then delete the application, and then complete the import process.
 - a. Upload a snapshot from a FreeForm app to your environment. See *Uploading Archives to the Service in Administering Migration for Oracle Enterprise Performance Management Cloud* for detailed instructions.
 - b. Import the snapshot. See *Importing Artifacts and Application from a Snapshot in Administering Migration for Oracle Enterprise Performance Management Cloud* for detailed instructions.
 12. Create application users in identity domain and assign predefined roles as needed. See *Manage Users and Roles in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.
 13. Set up access permissions as needed. See [Setting Up Access Permissions](#).

Frequently Asked Questions (FAQ) About FreeForm

Related Links

General Questions:

- [What is the difference between Essbase and an EPM Cloud FreeForm app?](#)
- [When will current Essbase 21c versions be adopted in EPM Cloud?](#)
- [What is the impact of having EPM Cloud + Essbase 21c? How will they work together? Data movement, reporting, Smart View connections, and so on.](#)
- [What is the recommendation for customers for their Essbase cubes when migrating from On-premise EPM to EPM Cloud?](#)
- [What are the default hardware settings that will limit processing?](#)
- [What EPM license do I need to have to get multi-cube FreeForm?](#)
- [Where can I find helpful resources for frequently asked questions about administrative tasks in EPM Cloud?](#)

FreeForm App Details Questions:

- [Are all FreeForm apps considered custom applications?](#)
- [Does multi-cube FreeForm app mean that I can have 12 cubes, each with only 2 or 3 dimensions?](#)
- [What kind of Administration Interface is available in FreeForm apps?](#)
- [Does Cube Refresh refresh all cubes at once?](#)
- [What about size thresholds?](#)
- [Will slow changing attributes be supported in FreeForm apps?](#)
- [Is there direct access to FreeForm cubes through Smart View and Oracle Analytics Cloud and Data Visualization?](#)
- [Are hybrid cubes supported with FreeForm apps?](#)
- [Do FreeForm apps offer a repository of multiple applications?](#)
- [Is load of metadata through Data Management available with FreeForm apps?](#)
- [Do we lose any Planning Custom App Type related functionality in FreeForm apps?](#)
- [Can you use Groovy if you select FreeForm apps?](#)
- [Can you remove a dimension after adding it?](#)
- [Can you use Planning Migration files to create an application similar to the Essbase OTL or the Migration zip files?](#)
- [Can you import multiple outline or Migration files?](#)
- [Is FreeForm only available with the Enterprise version of EPM \(vs. what was previously called PBCS\)?](#)
- [How do you upload dimensions \(and hierarchies\) from a legacy Oracle Hyperion Planning application into EPM using FreeForm?](#)
- [Can we refresh the database from Smart View?](#)
- [Are partitions enabled?](#)

- How can we configure the security filters?
- Is the Task Manager feature similar to Financial Consolidation and Close where it can be integrated, or is it just basic tasks? Can you please comment on this feature?
- How do you manage dimensions for FreeForm?
- Can I take a backup of a FreeForm app and then migrate it to a Financial Consolidation and Close or Planning Modules Cloud application?
- What about the business rules script, will they be migrated properly? And the configurable consolidation rule with regard to the Financial Consolidation and Close application?
- Does migration of an OTL work with all versions of Essbase?
- Is there no restriction for Data Integration in FreeForm that needs Scenario/Time period dimensions?
- Can we import data if the application is already created?
- Could you provide information about how the EPM Integration Agent feature is being used in Data Exchange?
- Is there the capability to create custom dimensions and business rules?

Oracle Essbase Migration Technical Questions:

- What tuning capabilities, if any, will be made available for FreeForm apps?
- Is partitioning supported? Transparent, Linked, Replicated?
- What about the MaxL Language for Admins, Automation, Shell integration?
- Are the MDX functions going to be supported?
- Aside from Data Integration/ETL how else can we recreate rules files in FreeForm apps? This could be cumbersome in Data Integration.
- For large scale ASO databases, what is the preferred data load mechanism in FreeForm apps?
- Any plans to create a CDF to Groovy migration tool?
- What Essbase artifacts can I migrate into FreeForm apps and how?
- What objects are skipped when Essbase outline files or Migration files are imported into FreeForm apps?
- How do Essbase features map to FreeForm apps in EPM Cloud?
- How do I deal with Active and Passive Essbase cubes in FreeForm when migrating these cubes from Essbase?

General Questions:

What is the difference between Essbase and an EPM Cloud FreeForm app?

Essbase as a solution can be bought as an on-premise solution or for deployment through Oracle Cloud Infrastructure (OCI). It is deployed as an OCI solution with the customer having full deployment control of the cubes. FreeForm apps are a SaaS solution offered by Oracle Enterprise Performance Management Cloud that allows Essbase cubes to be imported into EPM Cloud and deployed standalone. FreeForm apps have a hybrid architecture with a relational component beyond the Essbase cubes. FreeForm apps can have up to 12 cubes and up to 29 total dimensions across all cubes. (26 custom dimensions plus three account, period, and entity dimension types.)

When will current Essbase 21c versions be adopted in EPM Cloud?

Adoption of the latest Essbase versions into EPM Cloud is based on the impact on our customers – functional and performance. We are currently evaluating 21c for EPM Cloud adoption, and FreeForm apps will be one of the early adopters.

What is the impact of having EPM Cloud + Essbase 21c? How will they work together? Data movement, reporting, Smart View connections, and so on.

Essbase 21c on OCI is an IaaS deployment. FreeForm is a SaaS deployment. Data will need to be extracted from either environment or moved to the other. Oracle Smart View for Office shared connections can connect within the same platform so you can connect multiple FreeForm apps using one shared EPM connection. Essbase 21c on OCI would be a private connection when FreeForm is a shared connection in Smart View. Any data exchange between FreeForm apps and Essbase 21c on OCI or on-premise will be an export-import of data.

What is the recommendation for customers for their Essbase cubes when migrating from On-premise EPM to EPM Cloud?

On-premise customers migrating their on-premise EPM instances to EPM Cloud should migrate their Essbase reporting or planning cube instances into FreeForm apps in EPM Cloud. This will ensure consistent access to EPM business processes all within SaaS EPM Cloud. This also avoids data latency and data movement across environments. Also, it will ensure there is one place to maintain access rights and security. Customers can leverage all the latest features in the EPM Cloud platform and future enhancements on an ongoing basis.

What are the default hardware settings that will limit processing?

We operate based on named user licensing and the Cloud hosting policy guides performance expectations. EPM Cloud uses a standardized Cloud hardware configuration, and customers can make change requests using the Service Request process.

What EPM license do I need to have to get multi-cube FreeForm?

FreeForm apps are available with EPM Enterprise Cloud.

Where can I find helpful resources for frequently asked questions about administrative tasks in EPM Cloud?

See Frequently Asked Questions in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

FreeForm App Details Questions:

Are all FreeForm apps considered custom applications?

Yes. All FreeForm apps are fully custom with no out-of-box content. You have full flexibility in dimensions and members. You can create cubes of any dimension combination as long as the total cubes are less than 26 custom dimensions. You can map Account, Period, or Entity dimensions if they are part of the cube dimensionality to the default dimension types. We automatically map these dimensions if they exist in the source outline or Migration file.

Does multi-cube FreeForm app mean that I can have 12 cubes, each with only 2 or 3 dimensions?

Up to 12 cubes are allowed in a FreeForm app, in any combination of BSO and ASO cubes. Each cube can have the exact needed dimensions without requiring any required dimensions or members.

What kind of Administration Interface is available in FreeForm apps?

Essbase admin console features to the extent relevant in SaaS are available through Calculation Manager or the dimension editor in the FreeForm app. Since it is a web-based application there are other admin interfaces in EPM web applications that allow administrators to manage EPM applications.

Does Cube Refresh refresh all cubes at once?

FreeForm deployments are cubes contained within one FreeForm app. You can have up to 12 cubes. Refresh is by application across all cubes. There is no concept of cube-specific refresh in EPM Cloud.

What about size thresholds?

There are no file size limits in the new EPM Enterprise Cloud where FreeForm is available. Dimension size and data volumes are handled on a case-by-case basis. There is a standard well established support protocol for upscaling the thresholds.

Will slow changing attributes be supported in FreeForm apps?

Some customers have asked for this, but the demand for it is not high enough. We will investigate it based on customer connect feedback in Cloud Customer Connect.

Is there direct access to FreeForm cubes through Smart View and Oracle Analytics Cloud and Data Visualization?

Smart View connections to FreeForm apps goes through the standard Smart View EPM Cloud interface. FreeForm apps can be accessed from Oracle Analytics Cloud and using Data Visualization using the direct connect capability in Oracle Analytics Cloud.

Are hybrid cubes supported with FreeForm apps?

FreeForm apps support creation of Hybrid BSO cubes and ASO cubes.

Do FreeForm apps offer a repository of multiple applications?

Repository is by application but can be connected into from another application. Data across applications can be blended in web and Smart View.

Is load of metadata through Data Management available with FreeForm apps?

Yes. Data Management metadata load is supported where there is at least one BSO cube. We will be supporting FreeForm apps with only ASO cubes through Data Management in the near term. The import of metadata using the Outline Load Utility (OLU) is an option.

Do we lose any Planning Custom App Type related functionality in FreeForm apps?

Common platform functionality which does not depend on required Planning dimensions is all available. Open dimensional approvals is on the roadmap.

Can you use Groovy if you select FreeForm apps?

Yes. All platform features are available with FreeForm apps. All business rules, including Groovy rules, are supported with FreeForm apps.

Can you remove a dimension after adding it?

You can unselect the dimension from the cube and the next cube refresh will remove the dimension association from that cube.

Can you use Planning Migration files to create an application similar to the Essbase OTL or the Migration zip files?

FreeForm apps are meant for Essbase outline (OTL)/Migration imports or as build-from-scratch applications. On-premise Planning applications map to custom application types in EPM Enterprise Cloud.

Can you import multiple outline or Migration files?

FreeForm only accepts one outline or Migration file to create an application. Additional cubes can be created in the interface and associated to this outline. We don't import multiple outline or Migration files into a single application.

Is FreeForm only available with the Enterprise version of EPM (vs. what was previously called PBCS)?

FreeForm apps are available with EPM Enterprise Cloud.

How do you upload dimensions (and hierarchies) from a legacy Oracle Hyperion Planning application into EPM using FreeForm?

Options are to load using an Essbase outline file (OTL), dimension extracts from source and import, manage using web interface/SmartView extension, or manually create.

Can we refresh the database from Smart View?

Yes, a refresh from Smart View is possible. Right-click on **Dimensions**, and then **Refresh Databases**.

Are partitions enabled?

No. Partitions are not required within FreeForm since it is a SaaS deployment in EPM Cloud where alternate solutions are available. Data maps and Smart Push can be used to feed data across cubes. Partitioning requires both Disk I/O and network access, both of which are not allowed by Oracle SaaS Cloud. In Cloud, the disk and network have been virtualized. With a mixture of ASO and BSO cubes in the same FreeForm app and with use of Hybrid BSO, data maps, Smart Push, and Groovy, partitioning is not necessary.

How can we configure the security filters?

Security is controlled through access controls, users are granted access to an application and then objects from there. In addition, cell-level security exists in FreeForm.

Is the Task Manager feature similar to Financial Consolidation and Close where it can be integrated, or is it just basic tasks? Can you please comment on this feature?

FreeForm uses task lists. The Task Manager feature is now available in Planning applications, but not in FreeForm.

How do you manage dimensions for FreeForm?

Dimension management can be completed in a number of ways:

- Manually in the solution using the web interface and Smart View

- Integrated from a source solution using Data Management and import dimension jobs
- Using an integration tool such as Oracle Fusion Cloud EPM Infrastructure (OCI)
- From Oracle Data Relationship Management (DRM) with integration
- Using Oracle Enterprise Data Management Cloud, part of the EPM Enterprise solution, which provides a full enterprise data governance and control capability

Can I take a backup of a FreeForm app and then migrate it to a Financial Consolidation and Close or Planning Modules Cloud application?

No, FreeForm is a different business process and, as such, is not portable to other business processes.

What about the business rules script, will they be migrated properly? And the configurable consolidation rule with regard to the Financial Consolidation and Close application?

No, FreeForm is a different business process and, as such, is not portable to other business processes.

Does migration of an OTL work with all versions of Essbase?

You can use an outline (OTL) file or snapshot from an on-premises release 11.1.2.4.xxx (or later) single cube Essbase application to create a FreeForm app. For more information, see [FreeForm App Sources](#).

Is there no restriction for Data Integration in FreeForm that needs Scenario/Time period dimensions?

To use Data Integration in FreeForm you must have a minimum of Account, Period, and Scenario dimension types defined. For more information, see Loading Data to a Free Form Application in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Can we import data if the application is already created?

Data can be imported using the data import capability. For more information, see [Importing Data](#). Migration-based data imports can only be used during application creation.

Could you provide information about how the EPM Integration Agent feature is being used in Data Exchange?

The EPM Integration Agent is a fully unified solution for extracting and transforming data and metadata from your on-premises or any system such as a third-party cloud, and delivering it to EPM Cloud.

You can connect to and load data from on-premises data sources using custom SQL queries or pre-packaged queries to import data from sources such as EBS and the PeopleSoft General Ledger.

For more information, see EPM Cloud to On-premises Connectivity Using the EPM Integration Agent in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Is there the capability to create custom dimensions and business rules?

Yes. FreeForm, by design, is a completely open business process and, as such, dimensions and business rules would all be custom built.

Essbase Migration Technical Questions:

What tuning capabilities, if any, will be made available for FreeForm apps?

Since FreeForm apps are a SaaS application, tuning is managed by Oracle. To the extent needed, database properties are available within the Calculation Manager interface.

Is partitioning supported? Transparent, Linked, Replicated?

No. Partitions are not required within FreeForm since it is a SaaS deployment in EPM Cloud where alternate solutions are available. Data maps and Smart Push can be used to feed data across cubes. Partitioning requires both Disk I/O and network access, both of which are not allowed by Oracle SaaS Cloud. In Cloud, the disk and network have been virtualized. With a mixture of ASO and BSO cubes in the same FreeForm app and with use of Hybrid BSO, data maps, Smart Push, and Groovy, partitioning is not necessary.

What about the MaxL Language for Admins, Automation, Shell integration?

Direct scripting is prevented for SaaS Cloud security reasons. Given it is a SaaS platform, we don't allow open ended scripts. There are other alternatives available in EPM Cloud for MaxL. EPM Automate, EPM Agent, and Groovy are good alternatives.

Are the MDX functions going to be supported?

MDX is already supported to some extent for ASO in FreeForm apps. MDX scripting for custom calc and allocation is exposed since 20.05 through Groovy scripts.

Aside from Data Integration/ETL how else can we recreate rules files in FreeForm apps? This could be cumbersome in Data Integration.

Currently we support import of Essbase format data into FreeForm apps. See Defining a Data Integration and Loading Data to a FreeForm Application in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

For large scale ASO databases, what is the preferred data load mechanism in FreeForm apps?

Use the Essbase file format or use Data Integration.

Any plans to create a CDF to Groovy migration tool?

There are no plans for CDF migration to Groovy. Given Java security considerations, CDF migration cannot be done. Groovy is a good modern alternative.

What Essbase artifacts can I migrate into FreeForm apps and how?

Essbase Artifact	FreeForm Import File?	Notes
Application and cube metadata	Yes	Cubes and outline metadata are imported.
Calculation scripts	Yes	Imported into Calculation Manager and used as business rules
Data	Yes	Level zero import from source or using Migration
Disk volumes	NA	
Drill through definitions	No	Managed through Data Integration

Essbase Artifact	FreeForm Import File?	Notes
Excel workbooks and files	NA	Remapped with EPM Connections in Smart View
Filters	No	Metadata security is maintained in relational schema.
Linked Reporting Objects (LROs)	No	Attachments and comments are managed separately in EPM.
Location aliases	NA	
Log files	No	
Outlines and formulas	Yes	
Partitions	No	Alternatives with data maps and Smart Push across cubes are available.
Report scripts	No	Other export alternatives are available.
Rule files, text files, .csv files	Yes	
Scenarios	NA	
Substitution variables	Yes	
Users	No	Managed separately in IDM in EPM SaaS Cloud
User roles	No	Managed separately in IDM in EPM SaaS Cloud

What objects are skipped when Essbase outline files or Migration files are imported into FreeForm apps?

Essbase Artifact	Reason object was skipped during import
Custom Defined Function (CDF)	CDFs are possible, but given Java security consideration, cannot be done now. Groovy is a good alternative.
Custom Defined Macro (CDM)	CDMs in Essbase are old artifacts. Using a Calculation Manager design time prompt on a rule is a better implementation of that same concept.
Location Alias	Location Alias is a short-cut name that allows you to reference a physical Essbase database through its server name, app name, database name, username, and password. FreeForm apps are self-contained within a single application with multiple databases. Data maps and Smart Push can be used within the application for this.
Report Scripts	Alternatives for data import and export are available in EPM Cloud through Groovy and EPM Automate.
Load Rules	Data Integration offers the ability to pick up load rules, which can be done separately.

How do Essbase features map to FreeForm apps in EPM Cloud?

Native Essbase 11g Feature	FreeForm Apps in EPM Cloud
Active/Passive Cubes	Can be supported using implementation setup
Calc Scripts	Business Rules
Custom Defined Functions/Macros	Groovy
Database Versioning	Automation with Migration snapshots. Additional environments.

Native Essbase 11g Feature	FreeForm Apps in EPM Cloud
Oracle Essbase Administration Services Outline View/Edit	Dimension Editor
Essbase Cell-Level Security	Cell-Level Security in EPM Cloud applications
Linked Reporting Objects	Cell Comments, Doc Attachments, Supporting Details
Load Rules	Data Integration Rules, Groovy, Dimension/Data Import, OLU Export, Level 0 (automated) exports
MaxL scripts	EPM Automate, EPM Agent, and Groovy
Partitioning	Cross-Cube Data Maps/Smart Push with Groovy is an effective alternative
Report Scripts	Export rules, other query/automation solutions in EPM Cloud
Text List	Smart List across all dimensions

How do I deal with Active and Passive Essbase cubes in FreeForm when migrating these cubes from Essbase?

- Active cubes are cubes that are actively in use and are used frequently by many users.
- Passive cubes are cubes not actively used and are used only once in a while. Passive cubes are often version snapshots of data to represent a view of the data at a point in time for comparative decisions, depending on looking back or as archives of data for audit. Passive cubes are only needed occasionally and only by few users.
- Typically there are fewer active cubes than passive cubes. Since active cubes are used frequently and have a larger number of uses, customers should migrate all active cubes into active applications. Cubes which have common dimensions should, as much as possible, be collated into a single application to optimize the number of applications deployed.

For passive cubes, the recommended practice is as follows:

1. Request additional environments (typically 2-5) as part of the licensing process. The exact number of additional environments will depend on the number of users, and the number of passive cubes.
2. Create an import and export automation routine using EPM Automate that will Import Oracle Essbase outline files/Migration files for each of the passive cubes into a spare environment, and then export them out as a FreeForm Migration file. Export FreeForm Migration files for each of the passive cube applications into a local/remote cloud location each month to ensure that there is always a current version of the Migration file for each passive cube application readily available for import. Ensure that the file names of the application containing these passive cubes are intuitive and representative of the functional nature of the cubes they represent.
3. If there's a need to work with or view data in a passive cube, the Migration file for that application can be imported into the spare EPM Cloud instance. Since the Migration file version is current, it will import into the current version of EPM Cloud for FreeForm.

5

Setting Up Access Permissions

Assign access permissions to application artifacts such as dimensions, forms, dashboards, and task lists.

Related Topics

- [About User and Role Management](#)
- [Application Artifacts That Can Be Assigned Permissions](#)
- [Types of Access Permissions](#)
- [Managing Permissions to Artifacts](#)
- [Reporting on Access Permissions](#)
- [Retrieving Changed Information from Access Control](#)

About User and Role Management

This business process employs several security layers to ensure security. Infrastructure components, which are implemented and managed by Oracle, create a secure environment for the application.

Business process-level security is ensured by using the following mechanisms that permit only authorized users to access the application:


- Single Sign-on (SSO)
- Role-based access to the business process

Global roles are granted through the Oracle Cloud Identity Console. See *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Access permissions are granted through the application interface and are described in this chapter.

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to manage security in Access Control and set up access permissions in the business process. The Background and Security Overview sections in this tutorial describes the layers of business process security.	 Setting Up Security in Planning

Application Artifacts That Can Be Assigned Permissions

You can assign permissions to:

- Dimensions, including user-defined dimensions

 **Note:**

You can assign permissions to members by selecting the dimension property **Apply Security**. If you omit or clear the **Apply Security** setting, all users can access the dimension's members.

By default, the Account, Entity, Scenario, and Version dimensions are enabled for access permissions. Optionally, you can enable this option for Period, Years, and Custom dimensions.

See [Editing Dimension Properties](#).

- Navigation flows
- Launch privileges to rules
- Rule folders
- Forms
- Dashboards
- Infolets
- Reports, Books, and Bursting Definitions
- Form folders
- Dashboard folders
- Infolet folders
- Reports and Documents folders
- Task lists
- Groovy templates

Types of Access Permissions

Access permissions include **Read**, **Write**, **None**, and **Display**.

For descriptions of these options, see [Accessing Ancestor Members in Ad Hoc Grids](#).

You can also set who can launch which rules.

- **Launch:** Allow launch privileges

 **Note:**

View user types have no Write permission to dimension members, so can't launch rules having runtime prompts that include members, dimensions, member ranges, or cross-dimension runtime prompt types. They can, however, launch rules having runtime prompts of other types (for example, date type).

- **No Launch:** Disallow launch privileges

 **Note:**

If a user inherits Launch permission to a rule by belonging to a group, and is also assigned No Launch permissions by belonging to another group, the more restrictive No Launch assignment takes precedence.

You can specify access permission for individual users and each group. When you assign a user to a group, that user acquires the group's access permissions. If an individual's access permissions conflict with those of a group the user belongs to, user access permissions take precedence.

You can use groups to provide access permissions to your application artifacts such as forms, rules, and dashboards. Oracle Enterprise Performance Management Cloud recognizes three types of groups:

- **Predefined:** These groups are automatically created for each predefined role. All users are assigned to a predefined group based on their predefined role (for example, Power User).
- **EPM:** These are the groups that you create in **Access Control** in **Tools**.
- **IDCS:** These are the groups that you create in the Oracle Cloud Identity Console. You can view them in **Access Control** and assign them to application roles and EPM groups.

For more information, see *Manage Groups* in *Administering Access Control for Oracle Enterprise Performance Management Cloud*.

Inheriting Permissions

Inheritance determines the user or group's access permissions. You can specify an attribute that causes the children or descendants of that member to inherit its permissions. Assigned permissions take precedence over inherited permissions. You can include or exclude the member from the permissions setting.

Table 5-1 Options for Inheriting Access Permissions

Inheritance Option	Permission Assignment
Member	Only to the currently selected member
Children	To all children members in the level below the currently selected member
iChildren	To the currently selected member and all children members in the level below it
Descendant	To all descendant members below the currently selected member
iDescendant	To the currently selected member and all descendant members below it

How Permissions are Evaluated

When evaluating permissions, the application gives precedence in this order:

1. Role-level security. Users with the Service Administrator role have permissions to all application elements.
2. For Power User, User, and Viewer user types, permissions that are specifically assigned to users.
3. Permission assignments that are acquired by belonging to a group.

 **Note:**

If one member belongs to two groups with different permissions assigned to group members, the least restrictive permission takes precedence. For example, if one group assigns the member Read permission and another group assigns the same member Write permission, Write takes precedence. However if one of the groups assigns no permission (None) to its members, None takes precedence over Read and Write.

4. Parent-level assignments (for example, to parent members or folders).

Managing Permissions to Artifacts

Related Topics

- [About Assigning Permissions to Artifacts, Rules, and Folders](#)
- [Adding, Changing, and Removing Permissions to Artifacts and Folders](#)
- [Adding, Changing, and Removing Permissions to Rules and Rules Folders](#)

About Assigning Permissions to Artifacts, Rules, and Folders

Service Administrators can assign permissions to artifacts (forms, dashboards, infolets, reports, books, and bursting definitions), rules, and folders.

For information on assigning permissions to dimension members, see [Types of Access Permissions](#) and [Assigning Access to Dimension Members](#).

Principles:

- **Artifacts (Forms, Dashboards, Infolets, Reports, Books, and Bursting Definitions):**
 - Users and Power Users can view or enter data only into forms to which they have permissions (and can work only with members to which they have permissions).
 - Service Administrators and Power Users can design artifacts.
 - Power Users can access artifacts they created or to which a Service Administrator assigned them permissions.
 - Service Administrators have Write permissions to all dimension members and to all artifacts.
- **Rules:**
 - Users and Power Users can see and launch only rules to which they are assigned Launch permission.
 - Rulesets inherit launch permissions from the rules included in the ruleset.
- **Folders:**
 - Users who are assigned permissions to a folder can access the items in that folder, unless they are assigned more specific permissions. Likewise, Users have Launch permission to the Calculation Manager rules in folders to which they are assigned permissions, unless they are assigned more specific permissions.
 - When you assign permissions to a folder, all folders under it inherit that permission.

- If you assign specific permissions (for example, None or Write) to a folder, that permission takes precedence over its parent folder's permissions. For example, if a user has Write permission to Folder1 that contains Folder2 to which the user has None permission, the user can open Folder1, but doesn't see Folder2.
- If you assign specific permissions (for example, Launch) to a Calculation Manager folder, that permission takes precedence over its parent folder's permissions. For example, if a user has Launch permission to RulesFolder1 that contains RulesFolder2 to which the user has No Launch permission, the user can open RulesFolder1, but doesn't see RulesFolder2.
- If a user has None permission to a folder called Folder1 that contains a form called Form1 to which the user has Write permission, the user can see Folder1 and Form1.
- If a user has No Launch permission to a Calculation Manager folder called RulesFolder1 that contains a rule called Rule1 to which the user has Launch permission, the user can see RulesFolder1 and Rule1.

For procedures, see [Adding, Changing, and Removing Permissions to Artifacts and Folders](#) and [Adding, Changing, and Removing Permissions to Rules and Rules Folders](#).

Adding, Changing, and Removing Permissions to Artifacts and Folders


The permissions assigned to artifacts (forms, dashboards, infolets, and reports, books, and bursting definitions) and folders refer to the ability to modify the artifact and folder definitions and not the underlying data.

To assign permissions to artifacts and folders:

1. Navigate to the artifact (Data, Dashboards, Infolets, Reports, or Documents) listing page.
2. Click the Actions icon next to the artifact or folder, and then click **Assign Permission**.

Note:

You can assign permissions to only one artifact or folder at a time.

3. Click **Permissions**.
4. Perform a task:
 - To add permissions, click **Add User/Group**, and then select from the list of available users and groups.
 - To edit the type of permissions, select an option:
 - Click **Read** to allow the selected users and groups to view the artifact or folder in the listing, but not allow them to create, edit, or delete the artifact or folder information.
 - Click **Write** to allow the selected users and groups to view the artifact or folder in the listing, and to create, edit, or delete the artifact or folder information.
 - Click **None** if you don't want the selected users or groups to view the artifact or folder in the listing.
 - To remove permissions, click  next to the user or group.


Adding, Changing, and Removing Permissions to Rules and Rules Folders

To assign permissions to rules and rules folders:

1. Click **Rules**.
2. Select the rule or rule folder, click , and then click **Assign Permission**.

 **Note:**

You can assign permissions to only one rule or folder at a time.

3. Click **Permissions**.
4. Perform a task:
 - To add permissions, click **Add User/Group**, and then select from the list of available users and groups.
 - To edit the type of permissions, select an option:
 - Click **Launch** to allow the selected users and groups to launch the selected rules.
 - Click **No Launch** to prevent the selected users and groups from launching the selected rules.
 - To remove permissions, click  next to the user or group.

Reporting on Access Permissions

You can view current access permissions and print reports.

To report on current access permissions for users and groups in the application:



1. From the Home page, click Navigator , and then under **Monitor and Explore**, click **System Reports**.
2. Click **Access Control**.
3. On **Select User or Group**, select from the available options.
4. From the left **Available** panel, select and move users or groups on which to report to the **Selected** panel.
5. From the left **Available Objects** panel, select and move objects on which to report to the **Selected Objects** panel.
6. Select reporting options:
 - For **Show Matching Access of Type**, select the access to view: **Read**, **Write**, or **None**.
 - For **Group the Results By**, select how to view the report: **Users** or **Objects**.
 - From the **Report Type** sections, select **Assigned Access** or **Effective Access**:

Table 5-2 Access Report Types

Report Type	Description	Options
Assigned Access	Summarizes access permissions that Service Administrators assign	Specify whether access permissions are assigned by member selection relation or group membership: <ul style="list-style-type: none"> • Show matching access of relation: Member, Children, Children (inclusive), Descendants, or Descendants (inclusive). • Show Inherited From Group: Shows access permissions inherited by users in a group.
Effective Access	Summarizes access permission assignments as the application evaluates them (for example, by member selection relation, such as children, or group membership). This is useful if there are conflicts in access permissions.	Describe the origin of the effective access permissions by selecting Show effective access origin . For example, a user named JSomebody may be assigned Write access permissions to Entity1 and belong to a group named Sales that is assigned Read access permissions to Entity1. This setting would show that JSomebody has Write access permissions to Entity1 because individual assigned access permissions supersede access permissions inherited by group membership.

 **Note:**
Effective Access reports can't be generated for groups.

7. Click **Create Report**.

Working with Access Permissions Reports

The report on access permissions displays in Adobe Acrobat. You can use the Adobe Acrobat toolbar to work with the report.

Retrieving Changed Information from Access Control

Changes to group names or group membership from Access Control are not reflected in the application. To apply changes, you must reimport security artifacts.

To synchronize information after modifying group properties:

1. Access the environment as a Service Administrator.
2. Click **Tools**, and then **Migration**.
3. Export Security artifacts:
 - a. Click **Core**, and then select **Security**.
 - b. Click **Export**.
 - c. Enter a file name and click **OK**.
 - d. Review the Migration Status Report to ensure that the export is successful.
 - e. Click **Close**.
4. Import the snapshot that you created:
 - a. On the **Migration** page, click **Snapshots**.

- b. Under **Actions**, click **•••** next to the snapshot that you created in the preceding step, and then click **Import**.
- c. Click **OK**.
- d. Review the Migration Status Report to ensure that the import is successful.
- e. Click **Close**.

6

Managing Applications

View and manage applications, cubes, and dimensions using the application console.

Related Topics

- [Application Overview](#)
Start here to learn about managing applications, dimensions, and dimension members.
- [Refreshing the Application](#)
Refresh the application whenever you make changes to the application structure.
- [Managing Cubes](#)
Use the cube editor to let you view or add cubes for Standard applications.
- [Managing Dimensions](#)
Start here to learn how to manage dimensions and dimension members.
- [Setting User Preferences](#)
- [Administering Variables](#)
- [Viewing Activity Reports](#)
Monitor user activities with activity reports.
- [Importing and Exporting Data and Metadata](#)
Move data and metadata in and out of the application using Planning.
- [Importing Exchange Rates for a Simplified Multicurrency Application](#)
Import exchange rates for a simplified multiple currency application using a template.
- [Validating the Essbase Outline](#)
Pre-validate the Essbase outline to ensure that your application is compatible with a Hybrid Essbase version.
- [Creating and Refreshing Application Databases](#)
Things you need to know before you refresh the application database.
- [Adding an Aggregate Storage Outline to an Application](#)
Understand what aggregate storage is and how to use it in an application.
- [Converting an EPM Standard Cloud Service to EPM Enterprise Cloud Service](#)
Learn how to convert an EPM Cloud Service application from Standard to Enterprise.
- [Converting a Planning Application](#)
Learn how to convert Planning applications from Reporting to Standard, and from Standard or Reporting to Enterprise.
- [Removing an Application](#)
Proceed with caution when removing an application.
- [Setting the Daily Maintenance Process Start Time](#)
Understand how to determine and set the most convenient time to start the hour-long daily maintenance process.
- [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#)
Use the Inbox/Outbox Explorer to upload files to the server or download them to your computer.

Application Overview

Start here to learn about managing applications, dimensions, and dimension members.

An application is a related set of dimensions and dimension members used to meet a set of business process needs. Each application has its own accounts, entities, scenarios, and other data elements.

To create an application, see [Creating a Planning Application](#).

After an application is created, you can view and manage it using the application console. To view the application console, click **Application**, and then click **Overview**.

The application console shows the application properties (including the application type) and application statistics, such as the number of tasks, plans, approval hierarchies, and rules in your application. It also lists the cubes (for Standard applications) and dimensions (for Reporting applications) used by the application.

- To view the application overview, click **Overview**.
- To manage cubes, click **Cubes**. See [Managing Cubes](#).
- To manage dimensions, click **Dimensions**. See [Managing Dimensions](#).
- To view activity reports, click **Activity**. See [Viewing Activity Reports](#).

Refreshing the Application

Refresh the application whenever you make changes to the application structure.

Changes you've made to the application are not reflected to users performing data entry and approvals tasks until you refresh the application. For example, if you modify properties of a dimension member, or add a member, or change access permissions, users will not see the updates you've made until you refresh the application.

To refresh the application:

1. Click **Application**, and then click **Overview**.
2. Click **Refresh**.

Note:

The application is automatically refreshed during an application update. Information about the refresh is captured in a job called Content Update. To view the progress and details of the content update process, use the Jobs console, which you can access by clicking **Jobs** in the **Application** cluster in the Home page. See [Viewing the Status of Jobs](#) in this guide for information on how to view jobs, and Setting Content Update Start Time in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for information about setting the Content Update start time.

Managing Cubes

Use the cube editor to let you view or add cubes for Standard applications.

You can add up to seven total cubes to a Standard application. After a cube is added, it will behave like any other cube.

Videos

Your Goal

Learn how to manage cubes. Applications are made up of one or more cubes that store metadata and data.

Watch This Video



[Managing Cubes in Planning](#)

Related Topics

- [Viewing and Managing Cubes](#)
- [Adding Cubes](#)
- [Clearing Cubes](#)
- [Improving Cube Performance](#)

Viewing and Managing Cubes

To view and manage cubes:

1. Click **Application**, and then click **Overview**.
2. Click **Cubes**.
3. Perform one task:
 - To view the details of a cube, click the name of the cube that you want to view.
 - To add a cube, click **Create**, then complete the cube details, and then click **Done**.

 **Note:**

When you create a new block storage cube, you can select the option **Enable Sandboxes**. Selecting this option also provides the **Enable Sandboxes** option for Version members.

See [Managing Sandboxes](#).

For cube details, see [Adding Cubes](#).

 **Note:**

You can rename a cube only during application creation. After a cube is added, you can't rename or delete it.

Adding Cubes

For Planning, you can add up to seven total cubes—three block storage cubes and three corresponding aggregate storage cubes plus one consolidating aggregate storage cube, each with a unique aggregate storage application name. See the chart below for a comparison of cubes by application type.

After a cube is added, it behaves like any other application cube. If the cube maps to an aggregate storage database, then aggregate storage limitations apply.

Note:

For an aggregate storage cube, you must specify an application name to contain the database since an aggregate storage database must reside in its own application.


Cube Comparison by Application Type

Planning Application Types
Cube Comparisons

EPM SKUs	App type	Open Cubes		Module Cubes		TOTAL
		BSO	ASO	BSO	ASO	
EPM Cloud Enterprise	Modules Based	3	4	5	2	14
	Custom	6	6	0	0	12
	Free Form*	12*	12*	0	0	12
	Sales Planning	0	1	3	2	6
	SWP	0	1	2	1	4
	Predictive Cash Forecasting (PCF)	0	1	2	1	4
EPM Cloud Standard	Modules	1	1	5	2	9
Legacy	EPBCS	3	4	5	2	14
	PBCS	3	4	0	0	7

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* Total of 12 Hybrid BSO or ASO



Clearing Cubes

Related Topics

- [About Clearing Cubes](#)
- [Creating Clear Cube Jobs](#)
- [Starting and Deleting Clear Cube Jobs](#)
- [Scheduling Clear Cube Jobs](#)

About Clearing Cubes


The application enables you to clear specific data within input and reporting cubes. You can start the Clear Cube job right away or schedule it to run later.

 **Note:**

The Clear Cube job deletes the data you specify within input and reporting cubes, but it doesn't delete the cube definition in the application's relational tables.

Creating Clear Cube Jobs

To create a Clear Cube job:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then **Clear Cube**.
3. On the **Clear Cube** page, click **Create**, complete the job name, select the cube, then select a clear option:
 - **Clear All:** For both block storage and aggregate storage cubes, delete all data within a cube that is associated with the entities you select:
 - **Supporting Details**
 - **Comments**
 - **Attachments**
 - **Essbase Data**
 - For block storage cubes only:
 - **Upper-level blocks:** Delete data in upper-level blocks
 - **Non-input blocks:** Delete data in non-input blocks
 - **Dynamic blocks:** Delete data in dynamic blocks
 - **Empty blocks:** Delete blocks with #MISSING values
 - For aggregate storage cubes only:
 - **All Aggregations:** Delete all aggregate views
 - **Partial Data (Basic Mode):** Clear the data in the specified region. You can select the point of view using the member selector .
 - * **Supporting Details**
 - * **Comments**
 - * **Attachments**
 - * **Essbase Data Logical:** In which the input cells in the specified region are written to a new data slice with negative, compensating values that result in a value of zero for the cells you want to clear. The process for logically clearing data completes in a length of time that is proportional to the size of the data being cleared. Because compensating cells are created, this option increases the size of the database.
 - * **Essbase Data Physical:** In which the input cells in the specified region are physically removed from the aggregate storage database. The process for physically clearing data completes in a length of time that is proportional to the size of the input data, not the size of the data being cleared. Therefore, you might typically use this method only when you need to remove large slices of data.

- **Partial Data (Advanced Mode):** Clear Essbase data only by using an MDX expression in the text box provided.
 - * **Essbase Data Logical:** In which the input cells in the specified region are written to a new data slice with negative, compensating values that result in a value of zero for the cells you want to clear. The process for logically clearing data completes in a length of time that is proportional to the size of the data being cleared. Because compensating cells are created, this option increases the size of the database.
 - * **Essbase Data Physical:** In which the input cells in the specified region are physically removed from the aggregate storage database. The process for physically clearing data completes in a length of time that is proportional to the size of the input data, not the size of the data being cleared. Therefore, you might typically use this method only when you need to remove large slices of data.
- 4. Click **Save and Close**.
- 5. To view the job on the **Clear Cube** listing page, click **Refresh**.

To start the Clear Cube job right away or to delete a job, see [Starting and Deleting Clear Cube Jobs](#).

To schedule a Clear Cube job to run immediately, later, or at intervals, go to the Jobs page. See [Scheduling Jobs](#).

 **Tip:**

To streamline the job creation process for subsequent **Clear Cube** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

Starting and Deleting Clear Cube Jobs

To start a Clear Cube job right away or to delete a job:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then **Clear Cube**.
3. On the **Clear Cube** listing page, click **•••** next to the Clear Cube job that you want to start or delete, and then select one of the following options:
 - Click **Submit** to start the job right away.
 - Click **Delete** to delete the job.

Scheduling Clear Cube Jobs

You can schedule a Clear Cube job to run later or at intervals. To schedule a Clear Cube job, go to the Jobs page. See [Scheduling Jobs](#).

Improving Cube Performance

Jobs You Can Schedule to Improve Cube Performance

The application enables you to schedule jobs that improve cube performance. These jobs include:

- **Restructure Cube:** Performs a full restructure of a block storage cube to eliminate or reduce fragmentation. This will also remove empty blocks. Running this job won't push any changes from the business process to Essbase.
- **Compact Outline:** Compacts the outline file of an aggregate storage cube. Compaction helps keep the outline file at an optimal size. Compacting the outline doesn't clear the data. Running this job won't push any changes from the business process to Essbase.
- **Merge Data Slices:** Merges incremental data slices of an aggregate storage cube. Fewer slices improve a cube's performance. You can merge all incremental data slices into the main database slice or merge all incremental data slices into a single data slice without changing the main database slice. You can optionally remove cells that have a value of zero.
- **Optimize Aggregation:** Generates optimized views based on collected query tracking information in an aggregate storage cube. This job has two actions:
 - **Enable Query Tracking:** Records a meaningful set of queries, and then uses the recorded query data to select the most appropriate set of aggregate views to materialize for that database. You must enable query tracking and allow it sufficient time to collect data before executing the aggregation process based on query data.

Once enabled, query tracking continues until query tracking is disabled, the cube is reloaded or refreshed, the outline is compacted, the application is shut down, or additional aggregate views are materialized for the database. Query tracking does not resume automatically after these actions occur.

Note:

The following actions clear the stored query tracking information from the aggregate storage cube, but they do not disable query tracking:

- * Merging incremental data slices
- * Clearing data
- * Clearing existing aggregations
- * Clearing partial data
- * Loading data into the aggregate storage cube

- **Execute Aggregation Process:** Calculates aggregations for aggregate storage databases that contain data and to which you are granted Calculation permission. To perform an aggregation, you use system recommended views. The selection of views and aggregation processes are combined into one, non-configurable operation performed by the server. You can optionally specify the maximum disk space for the resulting files, base the view selection on user querying patterns, and include rollup hierarchies in the view selection. Select one or more of the following options:

- * **Based on query data?:** Aggregate the views the server selects, based on collected user querying patterns. This option is only available if query tracking is turned on.
- * **Include rollup option?:** Include secondary hierarchies (with default level usage) in the view selection process.
- * **Include growth size option?:** Aggregate the views the server selects, until the maximum growth of the aggregated database exceeds limits you specify. Enter the size (in ratio) beyond which the server should stop the aggregation.

You can start the jobs right away or schedule them to run later.

**Note:**

Users can stay logged in during these actions.

Related Topics

- [Scheduling Jobs](#)
- Optimize BSO Cubes in *Oracle Enterprise Performance Management Cloud Operations Guide*
- Optimizing Aggregate Storage Option Cubes in *Oracle Enterprise Performance Management Cloud Operations Guide*

Managing Dimensions

Start here to learn how to manage dimensions and dimension members.

Dimensions categorize data values.

These dimensions are provided with the application: Account, Entity, Scenario, Version, Period, Currency (for a multicurrency application), and Years.

Dimensions on the **Dimensions** page are listed in order of precedence. The order of dimensions is critical for the structure and performance of an application. The order of your dimensions determines how your data calculations will perform. **Evaluation Order** enables you to specify which data type prevails when a data intersection has conflicting data types.

For example, if Account members are set to the Currency data type, and Product members are set to the Smart List data type, you can set whether the Currency or Smart List data type prevails at an intersection.

**Note:**

For a Smart List to be viewable in forms, the dimension to which the Smart List type member belongs must be first in the evaluation order. See [Working with Smart Lists](#).


To manage dimensions:

1. Click **Application**, click **Overview**, and then click **Dimensions**.
2. Perform a task:

- To filter the dimensions by cube, see [Filtering the Dimension View by Cube](#).
- To view and edit the properties of dimensions and their members, click the name of the dimension. See [Editing Dimensions in the Simplified Dimension Editor](#).
- To reorder the dimensions, click the up or down arrow in the **Order** column next to the dimension that you want to move.
- To set a different evaluation order, click the **Evaluation Order** field next to the dimension that you want to update.
- To rename a dimension, click the name of the dimension that you want to rename, select the **Edit Dimension Properties** tab, and then enter a new name in the **Dimension** field. See [Editing Dimension Properties](#).
- To create a dimension, click **Create**. See [Creating Dimensions](#).
- To import metadata, click **Import**. See [Importing Metadata](#).
- To export metadata, click **Export**. See [Exporting Metadata](#).

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Get an introduction to Dimensions and Members and learn how to manage them in Oracle Enterprise Performance Management Cloud business processes.	 Managing Dimensions in Cloud EPM Business Processes

Filtering the Dimension View by Cube

For a Standard application, you can filter the dimension view by cube. When you select a cube, only dimensions used in that cube are displayed.

To filter the dimension view by cube:

1. Click **Application**, click **Overview**, and then click **Dimensions**.
2. Click the down arrow to the right of **Cube** to filter the list of dimensions by cube.

By default, the application displays all cubes for a standard application. If the dimension list is filtered, the application displays only the dimensions used in the selected cube.

Filtering by cube (rather than viewing all cubes) also enables you to view these details about a dimension:

- Order of precedence
- Dimension density

Note:

The **Dense** column is hidden for applications that contain only ASO cubes. If an application contains a BSO cube or a BSO and an ASO cube, the **Dense** column displays for both cubes.

- Evaluation order

For information about editing dimensions, see [Editing Dimensions in the Simplified Dimension Editor](#).

Creating Dimensions

Creating a dimension adds it to the list of dimensions in the dimension view.

To create a dimension:

1. Click **Application**, click **Overview**, and then click **Dimensions**.
2. Click **Create**.
3. On the **Create Dimension** page, enter or select values for the properties that are displayed.

For FreeForm applications, you can select the dimension type. Dimension types can include:

- Account
- Entity
- Period
- Custom

Notes about dimension type:

- A dimension type is not listed if you've already created it (for Account, Entity, Period) or if you've exceeded the maximum number of dimensions (for Custom).
- You can't edit the dimension type after you've created the dimension.

For descriptions of the properties, see [Editing Member Properties](#).

For information about editing dimensions, see [Editing Dimensions in the Simplified Dimension Editor](#).

Setting User Preferences

Service Administrators specify defaults for the current application. However, users can override these application defaults by setting preferences to control many aspects of the application, such as their profile photo and how numbers display in the application.

To learn more about user preferences options, see [Setting Your Preferences in Working with Planning](#).

To learn more about application defaults and system settings, see [Managing Application and System Settings](#).

Administering Variables

Related Topics

- [Working with Substitution Variables](#)
- [Working with User Variables](#)

Working with Substitution Variables

Related Topics

- [About Substitution Variables](#)
- [Creating and Assigning Values to Substitution Variables](#)
- [Deleting Substitution Variables](#)

About Substitution Variables

Substitution variables act as global placeholders for information that changes regularly. For example, you could set the current month member to the substitution variable `CurMnth` so that when the month changes, you need not update the month value manually in the form or the report script. You create and assign values to substitution variables within the application. These substitution variables are then available in the application when you select members for a form.

For more information about selecting substitution variables, see [Selecting Substitution Variables as Members](#).



Note:

If you migrated an application that uses Global variables, you can view, but not edit, them in the application.

Creating and Assigning Values to Substitution Variables

To create a substitution variable and assign values to it:

1. From the Home page, click **Tools**, and then click **Variables**.
2. Select the **Substitution Variables** tab.
3. Click **+**.

A new variable is added to the bottom of the list.

4. Scroll to the bottom of the list, click the down arrow next to the **Cube** name for the newly added variable, and then select the cube.
5. For **Name**, enter the name of the substitution variable (up to 80 characters).
6. For **Value**, enter a value for the substitution variable (up to 255 characters).


 **Note:**

- You can specify a range of values when defining substitution variables; for example, `FY16:FY18`.
You can define a substitution variable range for base members and parent members. For base members, you can use a single colon (`:`) or a double colon (`::`) as delimiters; for example, `SunEnT 110::111`. However for parent members, you can only use a single colon (`:`).
- If the substitution variable will be used in data export job definitions for block storage cubes and the member name is numeric only, the member name must be placed in double quotation marks in the **Value** field; for example, `"1100"` or `"000"`. The double quotation marks aren't necessary for alphanumeric member names; for example, `a1110`. However if this variable will be selected in data export job definitions for aggregate storage cubes, you can't place the member name in double quotation marks in the **Value** field. Therefore if you need to use the same member name in substitution variables for data export jobs defined for both types of cubes, you must define two different substitution variables; one with quotes and one without

7. Click **Save**.

Deleting Substitution Variables

To delete substitution variables:

1. From the Home page, click **Tools**, and then click **Variables**.
2. Select the **Substitution Variables** tab.
3. Next to the substitution variable you want to delete, click .
4. To confirm deletion, click **Yes**.

Working with User Variables

Related Topics

- [About User Variables](#)
- [Creating User Variables](#)
- [Managing User Variables](#)
- [Setting Limits for User Variables on Forms](#)
- [Deleting User Variables](#)

About User Variables

User variables act as filters in forms, enabling users to focus only on certain members, such as a department. Before you can associate a user variable with a form, you must create the user variable. When you create forms with user variables, users must first select values in preferences for the variable before opening forms. Afterward, users can change the variable on the form only if it's a dynamic user variable. Otherwise, they must continue to set the variable

in preferences. For example, if you create a user variable called Division, users must select a division before working in the form.



 **Tip:**

Attributes are another way to filter forms. But instead of explicitly filtering by an attribute (like Red), you can create a user variable for the attribute dimension, and then use the user variable as the filter. Then you can enable the user variable as a dynamic user variable which allows users to change the value of the filter at runtime. This is a useful technique that allows for dynamic filtering.

The first time users select a variable for a form, they must do so in preferences. After that, they can update the variable in preferences or in the form. For information about selecting user variables as members, see [Selecting User Variables as Members](#).

Creating User Variables

To create user variables:

1. From the Home page, click **Tools**, and then click **Variables**.
2. Select the **User Variables** tab.
3. Click .
A new variable is added to the bottom of the list.
4. Scroll to the bottom of the list and click the down arrow next to the **Dimension** name for the newly added variable. For **Select Dimension**, select the dimension for which to create a user variable (including attribute dimensions).
5. In the **User Variable Name** column, enter the name of the user variable.
6. Click  to select dimension members.

 **Note:**

The **Use Context** setting means the value can't be chosen by the user from user preferences. Instead, the value is passed from another form based on its Point of View context and the value will change dynamically based on the context of the form. However if the user variable is used elsewhere, such as in rows and columns, you must create a different user variable so the user can set its own value for it because it won't be set dynamically.

7. Click **OK**.

You can now associate the user variable with a form. See [Selecting User Variables as Members](#). You can also set limits for user variables on forms. See [Setting Limits for User Variables on Forms](#).

Afterward, users can select members for the user variable. See *Working with Planning*.

Managing User Variables

You can set user variables to limit the number of members displayed on a form, helping users focus on certain members. For example, if you create a user variable called Division for the Entity dimension, users can select a member for their own division. You can create any number of user variables for each dimension (including attribute dimensions), and select user variables for any axis in the form. See [Defining Form Page and Point of View](#).

The typical sequence of steps:

1. If necessary, create the appropriate parent-level members in the dimension outline.
2. Define user variables for each dimension you want users to be able to filter (including attribute dimensions).

See [Creating User Variables](#).

3. When designing the form, associate the user variable with the form.

See [Selecting User Variables as Members](#).


4. Instruct users to select a member for the user variable associated with the form.

Before users can open forms that have user variables, they must select a member for User Variable Options in preferences. After selecting an initial value, they can change it in the form or in preferences. See *Working with Planning*.

Setting Limits for User Variables on Forms

You can limit which members users can see or select on individual forms by limiting their member selections for a user variable. The user variable limit applies the restriction to all users at the form level, regardless of their access permissions. In addition to setting the limits by members, Service Administrators can select limits by function (for example, "IChildren(Existing Employees)").

To set up user variable limits:

1. During form design, select **Enable Dynamic User Variables** to allow dynamic user variables in the form.
See [Setting Form Precision and Other Options](#).
2. Create a user variable.
See [Creating User Variables](#).
3. In the **User Variable Definition** field on the **Variables** page under the **User Variables** tab, click , and add or remove members to set limits.

To select members by function, click  and select from the available options.


4. In the form designer, assign the user variable to the page axis.

See [Defining Form Page and Point of View](#).

Deleting User Variables

You can delete user variables if they are not associated with a form. If you attempt to delete a user variable that is used in a form, you'll see an error message saying it cannot be deleted. The message will also provide the names of the forms where the user variable is used.

To delete user variables not associated with forms:

1. From the Home page, click **Tools**, and then click **Variables**.
2. Select the **User Variables** tab.
3. Next to the user variable you want to delete, click .
4. To confirm deletion, click **Yes**.

Viewing Activity Reports

Monitor user activities with activity reports.

The Activity Report enables Service Administrators to understand application usage. It also helps streamline application design by identifying user requests, calculation scripts, forms, reports, and so on. Two versions of the report; an HTML version and a JSON version, are available.

Oracle Enterprise Performance Management Cloud retains Activity Reports for the last 60 days only. Oracle recommends that you download and create backup copies on a local computer to analyze them for historical trends.

The Activity Report is automatically generated in these situations:

- Every day during daily maintenance of the service
- Each time you submit a Provide Feedback submission
- Every time you execute the resetService EPM Automate command to restart an environment.

For details about the information that is provided in activity reports, see Activity Report Contents in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

To view activity reports:

1. Click **Application**, and then click **Overview**.
2. Click **Activity Reports**.
3. To view the report details, click **View** next to the name of the report that you want to view.

Importing and Exporting Data and Metadata

Move data and metadata in and out of the application using Planning.

Related Topics

- [Importing Metadata](#)
You can import metadata from a flat file in a comma-delimited, tab-delimited, or other format.
- [Exporting Metadata](#)
You can export metadata to a flat file in a .csv (comma-delimited) or .txt (tab-delimited or other delimiter character) format.
- [Importing and Exporting Data](#)

Importing Metadata

You can import metadata from a flat file in a comma-delimited, tab-delimited, or other format.

These artifacts are supported in the imports:

- Dimensions
- Smart Lists
- Exchange rate tables


To import metadata, perform these tasks:

- Create an import file for each artifact that you want to import. See [Creating the Metadata Import File](#).
- Load the import file or files (you can import multiple dimension files at the same time). See [Loading the Metadata Import File](#).

Note:

- You cannot rename members of attribute dimensions during a metadata import. Renaming of members will be ignored.
- You cannot delete attribute dimensions while importing metadata.

Videos

Your Goal	Watch This Video
Learn how to import metadata.	 Importing Metadata in Cloud EPM

Creating the Metadata Import File

Related Topics

- [About the Metadata Import File](#)
- [Example Entity Dimension Import File](#)
- [Other Supported Delimiter Characters](#)

About the Metadata Import File

Before you begin loading, you must create an import file for each artifact you want to import (dimensions, smart lists, and exchange rate tables). The import file must contain a header record, and then below the header record, a list of metadata records that you want to import or update. The file format can be .csv (comma-delimited) or .txt (tab-delimited or other delimiter characters).

1. A header record, the first line in the file:
 - Lists the dimension and any member properties used by subsequent metadata records; the header record and subsequent records don't need to include all

properties; properties that are not included are inherited from the corresponding parent's default property value

- Is case sensitive
 - Can list properties in any order, as long as the subsequent metadata records are in the same order
 - Can use comma or tab delimiters. Other delimiter characters can be used if they are supported and the same delimiter character is used throughout the file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
2. After the header record, a list of metadata records that you want to import or update. Each metadata record contains a delimited list (comma, tab, or other) of property values that matches the order designated in the header record. A metadata record can skip a property that is specified in the header record; in this case, the default property is assumed.

 **Note:**

Only characters that are included in the UTF-8 character set are supported in import or export files. Characters that aren't included in the UTF-8 character set are considered invalid. For dimension name restrictions, see [Naming Restrictions for Dimensions, Members, and Aliases](#).

In order to delete UDAs and Attributes in metadata load files, replace the UDAs and attributes with <none> instead of leaving the property value blank.

For an example import file, see [Example Entity Dimension Import File](#).

Example Entity Dimension Import File

```
Entity,Parent,Data Storage,Plan Type (Plan1),Plan Type (Plan2),Plan Type (Plan3),Data Type,Base Currency,
Alias: Default NoEntity,,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Unspecified Entity
AllEntities,,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Total Entity
1000,AllEntities,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Agencies
1001,1000,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Administration and Finance
1011,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Office of the Secretary of Administration and Finance
1012,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Bureau of State Office Buildings
1101,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Finance and Administration
1102,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State Office Buildings
1103,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Safety and Security
1104,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State House ADA/Communications Access
1105,1012,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,State House Events
1013,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Civil Service Commission
1014,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Department of Revenue
1106,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Child Support Enforcement
1107,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Division of Local Services
1108,1014,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Appellate Tax Board
1015,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Developmental Disabilities Council
1016,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Division of Administrative Law Appeals
1017,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Dept. of Revenue
1018,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Executive Office for Administration and Finance
1019,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,George Fingold Library
1020,1001,Never Share,TRUE,TRUE,TRUE,Unspecified,USD,Group Insurance Commission
```

In this example, the import file loads an Entity dimension with the required header record and three data records. This example is comma-delimited. The header record specifies the member to be imported (Entity), the parent member (Parent) into which to import the member, and the Data Storage property to assign to the member.

```
Entity, Parent, Data Storage
e1, Entity,
```

```
e2, ,  
e1, e2, Shared
```

Using this import file would result in this outline, assuming that no other members exist:

```
Entity  
e1  
e2  
    e1(Shared)
```

The first data record (`e1, Entity`) imports Entity member `e1` as a child under the root member `Entity`. Unspecified values assume the default. For example, if data storage isn't specified, it assumes the default value, `Never Share`. The next data record (`e2, ,`) imports Entity member `e2` under the dimension root member because no parent is specified, and sets data storage to `Never Share`. The last data record (`e1, e2, Shared`) imports a shared member of `e1` under member `e2`, and sets data storage to `Shared`.

Other Supported Delimiter Characters

In addition to commas and tabs, the application supports these delimiter characters in import and export files:

- tilde (~)
- grave accent (`)
- exclamation point (!)
- number sign (#)
- question mark (?)
- dollar sign (\$)
- percent sign (%)
- caret (^)
- ampersand (&)
- asterisk (*)
- parentheses ()
- hyphen-minus (-)
- plus (+)
- colon (:)
- semicolon (;)
- angle brackets (< >)
- backslash (\)
- forward slash (/)
- vertical bar (|)
- apostrophe (')
- braces { }
- underscore (_)

- brackets ([])
- at sign (@)
- period (.)

Only one character is supported for use as a delimiter. For example, one vertical bar (|) is supported, but two vertical bars (||) are not supported.

 **Caution:**

Not all of the characters listed can be used for all import and export scenarios. Note the following exceptions.

Import and Export Metadata Delimiter Exceptions

Don't use these delimiter characters in metadata import and export files.

Table 6-1 Import and Export Metadata Delimiter Exceptions

Delimiter Character	Reason for Exception
double quotation mark (")	Creates an empty file
plus (+)	Causes an error if the metadata import file contains consolidation properties that use these characters
minus (-)	
forward slash (/)	
percent sign (%)	
angle brackets (< >)	Causes an error if a property uses the value <none>

 **Note:**

Any character that conflicts with a character in a member name will cause an error.

Import and Export Data Delimiter Exceptions

Table 6-2 Import and Export Data Delimiter Exceptions

Delimiter Character	Reason for Exception
apostrophe (')	Causes an error if used in a cube name
parentheses ()	Causes an error if used in a data import file
double quotation mark (")	Creates an empty file
hyphen-minus (-)	Causes an error if used in a data import file

Loading the Metadata Import File

To load the metadata import file:

1. Create a metadata import file for each artifact (dimensions, smart lists, and exchange rate tables) that you want to import. See [Creating the Metadata Import File](#).

2. Click **Application**, and then click **Overview**.
3. Click **Dimensions**, and then click **Import**.
4. On the **Import Metadata** page, click **Create**.
5. Select the location of the metadata import file or files:
 - **Local**: Loads the import file or files from a location on your computer. For **Import File**, click **Browse** to select the import file on your computer for the artifact you're importing.
 - **Inbox**: Loads the import file or files from the server. Enter the name of the file in **Import File**. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
6. For **File Type**, select **Comma delimited**, **Tab delimited**, or **Other**.

If **Other** is selected, enter the delimiter character that is used in the import file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
7. Select **Clear Members** to delete members not explicitly specified in the load file before performing the import.

 **Note:**

- Any member not specified is deleted from the application outline after importing the dimension unless it's an ancestor of a member that was specified, or it's a base member of a shared member that was specified.
- If **Clear Members** isn't selected, the import will only add or update existing members. Oracle recommends loading the metadata file without selecting **Clear Members** to make sure the file loads successfully. Then, select **Clear Members** and execute the import again
- **Clear Members** is unavailable in certain dimensions where members must exist and are critical to the application.

Currently, these dimensions are Currency, Period, Scenario, Version, and Years.
- Members that can't be deleted in the dimension editor for any reason (for example, because they're used in a form or in a validation rule) won't be deleted.

8. **Optional:** If the location selected is **Inbox**, click **Save as Job** to save the import operation as a job, which you can schedule to run right away or at a later time. You can't select this option if **Local** is selected. See [Managing Jobs](#).

 **Note:**

- Saving an import operation as a job is useful to batch a load sequence; for example, import metadata, then import data, then run rules when the data load is complete.
- You can run up to five import jobs at one time.
- If you want to review the data that was rejected during the metadata import job, you can specify an **Error File** on the **Save as Job** dialog. This file will provide information about the metadata records that were not imported for each dimension. If an error zip file is specified, a separate error file is created for each dimension, then the error files are zipped together, and the zip file is stored in the Outbox where you can download the file using Inbox/Outbox Explorer. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

 **Tip:**

To streamline the job creation process for subsequent **Import Metadata** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

9. **Optional:** If the location selected is **Local**, click **Validate** to test whether the import file format is correct.
10. Click **Import** to run the import operation.

If the cubes listed in the import file don't match the cube names in the application, the application will ignore unrecognized cube columns.

If the import fails, a **Failed** status will display in the **Last Validate/Import** column. Click **Failed** to view the detailed status. If the import is successful, a **Completed** status will display in the **Last Validate/Import** column. To view details about the successful import, click **Completed**, and then in the **Show** drop-down, select **All**.

When performing metadata loads as a part of cloning environments or importing snapshots using Migration or EPM Automate, Oracle Enterprise Performance Management Cloud uses the multi-pass solution. This solution automatically initiates another load of the same metadata input file if the previous metadata load resulted in rejected records.

Exporting Metadata

You can export metadata to a flat file in a .csv (comma-delimited) or .txt (tab-delimited or other delimiter character) format.

These artifacts are supported in the exports:

- Dimensions
- Smart Lists
- Exchange rates


The application creates an export file for each artifact (.txt or .csv, depending on the file type), and all export files are consolidated into one zip file. You must extract the .csv or .txt files from

the zip file if you want to use the files as import files (for example, when importing into another application).

 **Note:**

Only characters that are included in the UTF-8 character set are supported in export or import files. Characters that aren't included in the UTF-8 character set are considered invalid. For dimension name restrictions, see [Naming Restrictions for Dimensions, Members, and Aliases](#).

Videos

Your Goal	Watch This Video
Learn how to export metadata.	 Exporting Metadata in Cloud EPM

To export metadata to a flat file:

1. Click **Application**, and then click **Overview**.
2. Click **Dimensions**, and then click **Export**.
3. On the **Export Metadata** page, click **Create**.
4. Select the target environment of the export file:
 - **Local**: Saves the export file to a location on your local computer.
 - **Outbox**: Saves the export file to the server where you can use it to schedule the export job. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

Click **Save as Job** to save the export operation as a job, which you can schedule to run right away or at a later time. You can't select this option if **Local** is selected.

 **Note:**

- You can run up to five export jobs at one time.
- When scheduling export jobs, you can specify a unique output file name for each job.
- For more information about scheduling jobs, see [Managing Jobs](#).

 **Tip:**

To streamline the job creation process for subsequent **Export Metadata** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).


5. Select the artifact or artifacts to export.
6. Select an option:
 - **Comma delimited**: Creates a comma-delimited .csv file for each artifact.

- **Tab delimited:** Creates a tab-delimited .txt file for each artifact.
 - **Other:** Creates a .txt file for each artifact. Enter the delimiter character that you want to use in the export file. For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
7. Click **Export**, and then specify where to save the export file.

Importing and Exporting Data

After the dimensions are imported, you can populate the application data. You can't do a direct data load. You must import data from a file.

Videos

Your Goal	Watch This Video
Learn how to export and import data in your business process.	 Exporting and Importing Data in Planning

Related Topics

- [Importing Data](#)
- [Driver Member Casting Errors](#)
- [Exporting Data](#)
- [Viewing Data Import and Export Status](#)

Importing Data

Before importing data, you must:

- Define or load metadata and refresh the database. See [Importing Metadata](#).
- Prepare the data load file. Source data must be in a business process-specific data file format or in an Oracle Essbase data file format.
- Ensure the data load files do not contain any thousands separators, quotes, and so on, around data values. Up to one single . (decimal point) character is supported.
- Ensure the data import file type is .csv, .txt, or .zip.

You can create a data import file based on a template, or you can generate one based on the source system. To use a template, run the export data process in your business process and use the exported file as a template. See [Exporting Data](#).

Note:

When importing data, no validation is performed on intersections to determine which are valid, and data is loaded to all intersections. To review data that has been loaded into invalid intersections, run the Invalid Intersection report before importing data to see and clear invalid intersections. See [Working With Invalid Intersection Reports](#).

To import data:

1. Click **Application**, and then click **Overview**.

2. Click **Actions**, and then click **Import Data**.
3. Click **Create**.
4. Select the location of the data import file:
 - **Local**: Imports the data import file from a location on your computer.
 - **Inbox**: Imports the data import file from the server. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

 **Note:**

Valid data import file types are .csv, .txt, or .zip.

5. Select the **Source Type** of the data import file:
 - **Default**: Select this source type to load data in a business process-specific data file format. If you select this option, you must choose between **Comma delimited**, **Tab delimited**, or **Other**.

 **Note:**

- If an import error occurs during a business process-specific data load, the import will continue to load valid data (partial load). Any errors will be noted in the import and export status. See [Viewing Data Import and Export Status](#).
- For a list of supported delimiter characters and exceptions, see [Other Supported Delimiter Characters](#).
- If data is exported to a file in a business process-specific format, you can use Notepad to change the database name in the file; for example, ASOCube, and then import the data file into the aggregate storage outline (provided all dimensions exist in the aggregate storage outline).

- **Essbase**: Select this source type to load data in an Essbase data file format. If you select this option, you must choose a cube.

For **Delimiter**, specify the delimiter for the Essbase data; options are **Space** or **Tab**.

 **Note:**

Stop In Case of Error is selected by default. If this option is selected and any import errors occur during an Essbase data load, the import will quit and no data will be loaded. If this option is cleared, data will continue to load even if there are errors.

6. Enter or select the source file:
 - If you selected **Local**, click **Browse** to navigate to the source file.
 - If you selected **Inbox**, enter the name of the file in **Source File**.
7. **Optional**: Clear **Include Metadata** to improve data import performance and to prevent members from changing position in the outline during data import. Regardless of this

option setting, the required metadata must already exist in the business process and in the Essbase outline before you can load the application data.

8. Click **Save as Job** to save the import operation as a job, which you can schedule to run later.

 **Note:**

- **Save as Job** is available only when **Inbox** is selected.
- Saving an import operation as a job is useful to batch a load sequence, for example, import metadata, then import data, then run rules when the data load is complete. See [Managing Jobs](#).
- You can run up to five import jobs at one time.
- If you want to review the data that was rejected during the data import job, you can specify an **Error File** on the **Save as Job** dialog. This file will provide information about the data records that were not imported. If an error zip file is specified, the zip file is stored in the Outbox where you can download the file using Inbox/Outbox Explorer. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).

 **Tip:**

To streamline the job creation process for subsequent **Import Data** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

9. **Optional:** Click **Validate** to test whether the import file format is correct.
10. Click **Import** to run the import operation.

 **Note:**

There is no import option in this business process to clear data before import. Therefore, the import will not overwrite existing data values with #MISSING values. However, you can run a clear cube job prior to import, or clear data with a script/rule or using the REST API:

- You can run a Clear Cube job that enables you to clear specific business process data within input and reporting cubes. See [Clearing Cubes](#).
- You can write a business rule that uses the CLEARDATA Essbase command to clear specific data values. See [CLEARDATA](#) in *Technical Reference for Oracle Analytics Cloud - Essbase*.
- You can use the Clear Data Slices REST API to clear business process and Essbase data for a specified region. See Clear Data Slices in *REST API for Enterprise Performance Management Cloud*.

Caution:

If the evaluation order in the application is changed after exporting data, the import may have unexpected results.

If a value in a data load input file doesn't match the evaluated driver member type; for example, if the evaluated type of a driver member is "date" and it's corresponding input value isn't a valid date format, a driver member casting error occurs. See [Driver Member Casting Errors](#).

Table 6-3 Videos



Your Goal	Watch This Video
Learn the highlights of loading data into your business process.	 Overview: Loading Data in Planning and Budgeting Cloud

Table 6-4 Tutorials

Your Goal	Learn How
Learn how to import and export data in your business process, including importing exchange rates into multicurrency business processes.	 Loading Data in Planning

Driver Member Casting Errors

A driver member casting error occurs when a value in a data load input file doesn't match the evaluated driver member type. Here are some examples of driver member casting errors:

- If a driver member is of type "Date" and it's corresponding input value isn't a valid date format
- If a nonexistent Smart List value is specified for a driver member of type "Smart List"
- If a nonnumeric value is supplied for a member of type "Currency," "Data," or "Percent."

A casting error can occur for each driver member specified in the input file and for every occurrence in a data record, so the number of casting errors for a given input record ranges from 0 to the number of drivers. Because successful driver member bindings can occur along with driver member binding errors, the application will not reject the entire input record, but the error will be noted in the import and export status. See [Viewing Data Import and Export Status](#).

Consider the following data record input file where a bad date value is specified:

```
Entity, aDate, aSl, aText, aCurr, aPercent, Point-of-View, Data Load Cube Name
e1, exampleBadDateValue, sl1, text11, 888, 0.99,
"FY15,Current,""BUVersion_1"",Local,u1,Jan",Plan1
```

Error messages displayed:

- After loading the data, the status window will read:
Outline data store load process finished (Invalid data values were not loaded). 7 data records were read, 7 data records were processed, 7 were

accepted for loading (verify actual load with Essbase log files), 0 were rejected.

- The error is noted as an error in the import and export status with the following entry details:

Category: Data record

Record Index: 2

Message: Unable to load specified data value in Record 2: (aDate: exampleBadDateValue)

- If multiple casting errors occur, each error is recorded in the same error message:
Unable to load specified data values in Record 2: (aSl: aaaaaaasll), (aPercent: cc), (aDate: exampleBadDateValue), (aCurr: bb)
- If the error message count exceeds the maximum limit, it will issue the following message:
The warning [Unable to load specified data values] message count limit (100) exceeded: no more warnings of this type will be issued.

Exporting Data

To export data to a file:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then click **Export Data**.
3. Click **Create** and make your **Export Data** selections:

Table 6-5 Data Export Options





Data Export Option	Description
Location	Select the target environment of the data export file: <ul style="list-style-type: none"> • Local: Saves the data export file to a location on your local computer. • Outbox: Saves the data export file to the server. See Uploading and Downloading Files Using the Inbox/Outbox Explorer.
Cube	Select a cube from the drop-down list. <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p> Note: The driver/column dimension in the Export Data job definition needs to be dense.</p> </div>
File Type	Select from the following types: <ul style="list-style-type: none"> • Comma delimited: Creates a comma-delimited .csv file for each artifact. • Tab delimited: Creates a tab-delimited .txt file for each artifact. • Other: Creates a .txt file for each artifact. Enter the delimiter character that you want to use in the export file. For a list of supported delimiter characters and exceptions, see Other Supported Delimiter Characters.
Smart Lists	Specify Export Labels or Export Names .

Table 6-5 (Cont.) Data Export Options

Data Export Option	Description
Dense Dynamic Members (for BSO cubes only)	<p>For a block storage (BSO) cube, select whether to Include or Exclude dense dynamic calculation members during export.</p> <p>Note the following:</p> <ul style="list-style-type: none"> • Excluding dynamic calculation members from exported data improves performance during data exports. • Sparse dynamic members are not included in the export even if the Include option is selected.
Dynamic Members (for ASO cubes only)	<p>For an aggregate storage (ASO) cube, select whether to Include or Exclude dynamic calculation members during export.</p>
<p> Note:</p> <p>Excluding dynamic calculation members from exported data improves performance during data exports.</p>	
Decimals	<p>Specify the number of decimal positions (0-16) to format the data after export, or select the default None to use the default precision formatting. For example, specifying a decimal value of 3 in the Decimals field will result in the exported data displaying three digits to the right of the decimal point, wherever applicable.</p>
<p> Note:</p> <p>Selecting None formats the decimal number as specified in the default precision settings, whereas selecting 0 formats the data to display a whole number. For example, if the data value you are exporting is 123.45678, selecting 0 will export the data as 123 and selecting None will export the data as 123.45678.</p>	
Slice Definition	<p>Select the slice of data to be exported.</p>
<p> Note:</p> <p>If you're exporting data from an aggregate storage cube and you're exporting multiple members simultaneously, make sure that at least one of the members you select is a non-shared member. You can export shared members individually because it's equivalent to selecting a base member. However, selecting level 0 descendants of a parent member whose descendants are all shared members is equivalent to not selecting any members from a dimension and the export will not run. Therefore, you must ensure that one of the members selected is a non-shared member.</p>	

4. **Optional:** Click **Save as Job** to save the export operation as a job, which you can schedule to run immediately or at a later time.

 **Note:**

- **Save as Job** is available only when **Outbox** is selected.
- You can run up to five export jobs at one time.
- When scheduling export jobs, you can specify a unique output file name for each job.
- For more information about scheduling jobs, see [Managing Jobs](#).

 **Tip:**

To streamline the job creation process for subsequent **Export Data** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

5. Click **Export**, and then specify where to save the data export file.

 **Note:**

To reduce the size of data export files, if a form has an entire row of #MISSING values, the row will be omitted from the data export file.

Troubleshooting

For help with troubleshooting issues if you get an Oracle Essbase query limit error when exporting a large number of data cells from ASO cubes, see *Handling Issues Related to Large Data Export from ASO Cubes* in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Viewing Data Import and Export Status

To view the status of a data import and export:

1. Click **Application**, and then click **Jobs**.
2. Click the name of the import or export job under **Recent Activity**.

The status page displays messages for **Errors**, **Warnings**, **Info**, and **All**. If there are errors and you specified an error file name while defining the job, you can download the generated error file using the **Error File** link.

Importing Exchange Rates for a Simplified Multicurrency Application

Import exchange rates for a simplified multiple currency application using a template.

To simplify managing exchange rates for a simplified multiple currency application, you can export the provided template, enter exchange rates in a spreadsheet, and import the rates to your application. You can import exchange rates right away or schedule an **Import Exchange Rates** job to run later.

 **Note:**

To view the exchange rates options, the application must have been created with the **Multicurrency** option enabled and the **Multicurrency Type** must be **Simplified**. A Currency dimension is then created. If you're unsure whether your multicurrency application is simplified, the existence of a Currency dimension will confirm it.

See [About Simplified Multicurrency](#).

To import exchange rates using a template:

1. From the Home page, click **Application**, and then **Overview**.
2. From the **Actions** menu, select **Export Exchange Rate Template**, and then open `ExchangeRateTemplate.csv` or save it locally.
3. In the template file, enter average and ending currency exchange rates for each period and each currency, specify members for the POV, and then save the file.

 **Note:**

The number 1 represents the exchange rate for the default currency in the application. Enter rates relative to the default currency.

4. From the **Actions** menu, select **Import Exchange Rates**, click **Create**, browse for the file, and then click **Import**.

 **Note:**

You can schedule the import to run as a job that runs right away or at a later time. To schedule an **Import Exchange Rates** job, select the **Inbox** option, point to an import file that is located in the Inbox, and then click **Save as Job**. See [Scheduling Jobs](#).

 **Tip:**

To streamline the job creation process for subsequent **Import Exchange Rates** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

Validating the Essbase Outline

Pre-validate the Essbase outline to ensure that your application is compatible with a Hybrid Essbase version.

As part of an effort to upgrade all environments to an Oracle Essbase version that supports Hybrid Block Storage Option (BSO) cubes, Oracle has added a process to pre-validate Essbase outlines to ensure a smooth transition when your environment is upgraded to a Hybrid Essbase version.

 **Note:**

For information about Essbase versions, see About Essbase in EPM Cloud in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

To ensure that your application is compatible with a Hybrid Essbase version, we've implemented a new utility which verifies the member formulas in your environment and provides a report so you can fix any issues. Use the following options under the **Essbase Outline Validation** menu option in the **Actions** menu on the application's **Overview** page:

- **Pre validate Outline:** Performs a validation of your application
- **Outline Pre-validation Report:** Displays a list of member formulas that need to be fixed to be compatible with Hybrid Essbase version

 **Note:**

- The **Essbase Outline Validation** menu option only displays if your environment is on a non-Hybrid Essbase version. If your environment is on a Hybrid Essbase version, then the **Essbase Outline Validation** menu option is no longer available.
- Another way to check whether your environment is on a Hybrid or non-Hybrid Essbase version is to view the value of **Essbase Version supports Hybrid Block Storage Option** in the **Activity Report**. If the value is **Yes**, it means that your environment is on a Hybrid Essbase version. If the value is **No**, then your environment is on a non-Hybrid Essbase version.

To validate the Essbase outline in your environment and to fix any errors found in member formulas:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Actions**, select **Essbase Outline Validation**, then select from the following options:
 - To perform the validation, select **Pre validate Outline**.
 - To view and download a report of errors found during validation, select **Outline Pre-validation Report**.

After you have fixed the member formulas, you can use the **Pre validate Outline** option again to make sure that all issues are resolved.

Creating and Refreshing Application Databases

Things you need to know before you refresh the application database.

Related Topics

- [Creating Application Databases](#)
- [Before Refreshing the Database](#)
- [Refreshing Application Databases](#)
- [Validating Metadata](#)

Creating Application Databases

The application database, which stores data for each cube in the application, is created when the application is created.

To create a Planning application, see [Creating a Planning Application](#).

If you need to clear the data, you can do so using Calculation Manager. To refresh the data, see [Refreshing Application Databases](#).

Before Refreshing the Database

You must refresh the database after changing the application structure, and modifying artifacts such as dimensions and members. Oracle recommends that you notify all users, asking them to save their work and close the application, before you refresh the database.

Before refreshing the database:

- Back up your application and export data from all databases.
- Decide if you want to enable all users or just the current Service Administrator to use the application in administration mode during the refresh
- Decide if you want to log off all users
- Terminate any active application requests

Refreshing Application Databases

The application database stores data for each cube in the application. You must refresh the database after changing the application structure, and modifying artifacts such as dimensions and members. You can start the Refresh Database process right away or schedule it to run later as a job.

To refresh the database:

1. See [Before Refreshing the Database](#).
2. Click **Application**, and then click **Overview**.
3. Click **Actions**, and then **Refresh Database**.
4. On the **Refresh Database** page, click **Create**, and then select from the following options:
Before Refresh Database

- **Enable use of the application for:** Lets **All users** or **Administrators** (or the current logged in Service Administrator) access the application in administration mode during the refresh
- **Log off all users:** Logs off all application users before starting the refresh
- **Stop all active requests:** Terminates any active requests in the Essbase application before starting the refresh

After Refresh Database

- **Enable Use of the Application for:** Lets **All users** or **Administrators** use the application after the refresh
- **Validate Metadata:** By default, this option is not selected. When this option is selected, the system scans for member identity (ID) mismatches between the business process and Oracle Essbase and then automatically resolves them after the refresh process. Selecting **Validate Metadata** might add additional time to the refresh process. For more information, see [Validating Metadata](#).

The **Validate Metadata** option is available for cubes with these storage options running on the Oracle Essbase version that supports Hybrid Block Storage Option (BSO) cubes: Hybrid BSO, ASO, and BSO. This option is not available for cubes running on the legacy Essbase version that does not support Hybrid BSO cubes.

5. To refresh the database now, click **Refresh Database**. To run the refresh later as a job, click **Save as Job**. All of the options you've selected on the **Refresh Database** page, including **Validate Metadata**, will persist to the saved job. See [Managing Jobs](#).

Tip:

To streamline the job creation process for subsequent **Refresh Database** jobs, you can duplicate an existing job using the **Save As** option, then update it. See [Duplicating Jobs](#).

Troubleshooting

For help with troubleshooting database refresh issues, see *Troubleshooting Database Refresh Issues* in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Validating Metadata

About Validate Metadata

Use the **Validate Metadata** setting (formerly called **Autocorrect Errors**) as part of the database refresh process to scan for and automatically resolve member identity (ID) mismatches between the business process and Oracle Essbase.

Caution:

Selecting **Validate Metadata** might add additional time to the refresh process.

In certain cases, the identity of a member changes in a way that causes it to be not fully recognized in the multi-dimensional database used by the application. When a member's identity is not fully correctly established within all parts of the system, it could sometimes cause

hierarchy issues like incorrect member ordering, or it could miss children underneath that member, or miss some siblings, or miss certain properties, and so on. Selecting **Validate Metadata** detects such members and automatically resolves their identity, allowing these members as well as their hierarchies along with properties and siblings, to be fully and correctly recognizable and usable within all the parts of the system.

Viewing the Report Detailing Member Movement and Deletion

After making member ID corrections, members might be deleted or moved. A report file detailing any member movement (to a different parent) or deletion is generated and placed in the Outbox in a csv (comma-delimited) file format. Review the report to reaggregate some of the stored parent members where the child hierarchy may have changed.

For example:

Action	Member	Parent	Dimension	Cube	New Parent
Delete	Member1	Parent1	Scenario	Plan1	
Move	Member2	Parent2	Account	Plan2	Parent3

The system generates a CSV file to the Outbox folder, and the filename is automatically generated with the application name followed by `_autocorrect.csv`; for example, `vision_autocorrect.csv`. This file is overwritten on each run.

After running the **Refresh Database** job with the **Validate Metadata** setting, you can download the export file from the Outbox.

To download files:

1. Click **Application**, and then click **Jobs**.
2. Under **Recent Activity**, click the job.
3. At the top of **Job Details**, click the export file option to select a download location.

Adding an Aggregate Storage Outline to an Application

Understand what aggregate storage is and how to use it in an application.

Related Topics

- [About Aggregate Storage](#)
- [Process for Adding an Aggregate Storage Database to an Application](#)

About Aggregate Storage

Aggregate storage is the database storage model that supports large-scale, sparsely distributed data that is categorized into many, potentially large dimensions. Selected data values are aggregated and stored, typically with improvements in aggregation time. Aggregate storage is an alternative to block storage (dense-sparse configuration).

Aggregate Storage Outline Cube Characteristics

- The application doesn't generate XREFs on aggregate storage databases. XREFs can only be generated on block storage databases.

- Because the application doesn't require all base dimensions on an aggregate storage database, approvals may not apply to the aggregate storage database if an approvals dimension is missing. If this is the case, normal security would apply.
- Dynamic time series members are not applicable for the Period dimension in an aggregate storage application.
- Creating and refreshing security filters are not applicable for aggregate storage databases.

Troubleshooting

Performance of aggregate storage reporting cubes is governed by many factors, including the number of slices in the cube, the outline of the cube, and the type of dimensions in the cube. See *Optimizing Aggregate Storage Option Cubes* in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Process for Adding an Aggregate Storage Database to an Application

To add an aggregate storage database to an application:

1. Create an aggregate storage cube. Perform one task:
 - Create an aggregate storage cube during application creation.
To create a Planning application, see [Creating a Planning Application](#).
 - Add a new cube using the cube editor.
See [Managing Cubes](#).
2. Add dimensions to the aggregate storage cube.
See [Editing Dimensions in the Simplified Dimension Editor](#).
 - If a Currency, Years, Scenario, or Version dimension is valid for an aggregate storage cube, the dimension members are also valid for an aggregate storage cube.
 - To perform currency calculations in a simplified multiple currency application for a custom aggregate storage cube, you must enable the Account, Period, and Currency dimensions for the aggregate storage cube. These dimensions in default aggregate storage cubes are enabled by default, but you must enable them manually for custom aggregate storage cubes. To enable Account, Period, and Currency dimensions for custom aggregate storage cubes, edit dimension properties for each dimension and select to enable them for the aggregate storage cube. See [Editing Dimension Properties](#).
3. Add dimension members. See [Adding Members](#).
4. Refresh the outline for the application. See [Refreshing Application Databases](#).
5. Create a form using the dimensions associated with the aggregate storage database. See [Administering Forms](#).

Converting an EPM Standard Cloud Service to EPM Enterprise Cloud Service

Learn how to convert an EPM Cloud Service application from Standard to Enterprise.



Note:

This topic discusses converting an EPM Standard Cloud Service to an EPM Enterprise Cloud Service. To convert a Planning application, see [Converting a Planning Application](#).

To increase the number of cubes and to use the logic required to support more extensive calculations and other advanced functionality such as IPM Insights, you can perform an in-place conversion from EPM Standard Cloud Service to EPM Enterprise Cloud Service.

For a list that details the applications and features available to you in EPM Standard Cloud Service and EPM Enterprise Cloud Service, see these topics in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*:

- Available EPM Cloud Subscriptions
- EPM Standard Cloud Service
- EPM Enterprise Cloud Service

Only customers who have purchased an EPM Enterprise Cloud license can convert from Standard to Enterprise. You will be asked to confirm that you have the Enterprise order ID to complete the conversion.



Caution:

Converting an application can't be undone. Be sure you back up your data before converting.

To convert from an EPM Standard Cloud application to an EPM Enterprise Cloud application:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then select **Convert to Enterprise**.
3. In the **Convert to Enterprise** dialog, select the checkbox to confirm you have the Enterprise order ID, and then click **Convert to Enterprise**.



Note:

After converting to Enterprise, users will need to refresh the Planning node in Calculation Manager to enable them to create Groovy rules. Without refresh, users might not get the drop-down to select Groovy in the script editor of Calculation Manager.

Converting a Planning Application

Learn how to convert Planning applications from Reporting to Standard, and from Standard or Reporting to Enterprise.



Note:

This topic discusses converting Planning applications. To convert an EPM Cloud Service application from Standard to Enterprise, see [Converting an EPM Standard Cloud Service to EPM Enterprise Cloud Service](#).

Related Topics

- [Converting to a Standard Application](#)
- [Converting a Standard or Reporting Application to an Enterprise Application](#)
- [Conversion Considerations](#)

Converting to a Standard Application

To increase the number of cubes and use the logic required to support more extensive calculations, convert a Reporting application to a Standard application.

During conversion, one cube, and the associated dimensions are added to your application. After conversion, you can add up to six additional cubes (three aggregate storage outline cubes and three block storage outline cubes).

You can enable sandboxes while converting a Reporting application to a Standard application. However, after you convert to a Standard application, you can't later enable it for sandboxes. To enable sandboxes, see [Enabling Sandboxes](#).



Caution:

Converting an application can't be undone. Be sure you back up your data before converting.

To convert to a Standard application:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then select **Convert to Standard**.

Converting a Standard or Reporting Application to an Enterprise Application

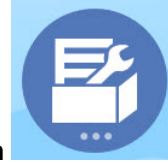
Learn about converting an application in this topic.

- If you purchased EPM Cloud *after* June 4, 2019, see New EPM Cloud Services in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* to learn about migrating an application to the new services.

- If you purchased EPM Cloud *before* June 4, 2019, you can convert a Standard or Reporting application to an Enterprise application.

To convert a Standard or Reporting application:

1. Review the conversion considerations. See [Conversion Considerations](#).
2. Back up the Standard or Reporting application.



3. Open the application, and then click **Application**, and then **Overview**



4. Click **Actions**, then **Convert to Enterprise**, and then **Continue** to proceed. A message lets you know if the application is converted to Enterprise. If successful, log off. The application type is changed to "Enterprise", which includes options to enable and configure the Planning modules, and enables Groovy scripting. Metadata and data isn't changed during the conversion.

5. Log on and enable features that you need.

These validations are performed when you enable features:

- There can't be a member that already exists with the same name as any of the custom and base dimensions you specify in **Map/Rename Dimensions**. For example, if you create a custom dimension called **Market** in Financials, there can't be a member called **Market** in any other dimension.
- There can't be a member with the name `NO_<<customDimension>>`, `Total_<Dimension>>`, `All_<<Dimension>>`, where `<<Dimension>>` is the actual dimension name you specified. For example, if you rename Plan Element in Financials to Element for a custom dimension, there can't be `No Element`, `Total Element`. This is specific to modules that depend on any non-prefixed member.
- The data storage for the Period and Account dimensions must be set to **Never Share**.
- The Year dimension name must be **Years**.
- 18 alias tables are predefined. The maximum supported is 32 (1 used internally). The conversion process attempts to merge the predefined alias tables with the alias tables in the existing application; if the count goes above 30, you get a validation error.
- The conversion process calculates the number of existing dimensions in the application and the number of new dimensions that would be created if the module is initialized. If resulting sum of both is greater than 32 (the maximum allowed), you'll see a validation error.
- For Projects, the name you specify for **Program** (a custom dimension option) shouldn't already exist as a non-attribute dimension.
- For Workforce, none of the version members can be **Label only**.

6. Recreate any user defined navigation flows.

When you convert an on-premises Oracle Hyperion Planning R11.1.2.1 (supported version) application to Planning using Migration, the same rules above apply.

Conversion Considerations

You can convert a Standard or Reporting application to an Enterprise application if:

- You are commercially authorized to implement an application of type "Enterprise".
- It does not use weekly, quarterly, or custom time periods.
- You rename the Year dimension to Years prior to converting.
- It uses simplified multicurrency (that is, it's not a standard currency application), if it's a multicurrency application.
- Artifact names don't use these prefixes:
 - oep_: Prefix for common artifacts
 - ofs_: Prefix for Financials artifacts
 - owp_: Prefix for Workforce artifacts
 - opf_: Prefix for Projects artifacts
 - ocx_: Prefix for Capital artifacts

Note that custom navigation flows are not converted. You need to recreate them after you convert the application.

Removing an Application

Proceed with caution when removing an application.

Because removing an application will delete all of its contents and any scheduled jobs, make a backup of your application.

To remove an application:

1. Click the **Application**, then click **Overview**.
2. Click **Actions**, and then **Remove Application**.

Setting the Daily Maintenance Process Start Time

Understand how to determine and set the most convenient time to start the hour-long daily maintenance process.

A business process instance requires one hour every day to perform routine maintenance. Service Administrators can select (and change) the most convenient time to start the hour-long daily maintenance process.

For information about daily maintenance operations and scheduling the maintenance start time for an environment, see *Managing Daily Maintenance in Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

 **Note:**

There is a system setting called **Export EPM Cloud Smart List textual data during daily maintenance for incremental data import** that, depending on if this setting is enabled, could impact the duration of the export. For more information and for recommendations about using this setting, see the following topics:

- Exporting Smart List Textual Data During Daily Maintenance for Incremental Data Import in *Oracle Enterprise Performance Management Cloud Operations Guide*
- [What Application and System Settings Can I Specify?](#)

To prevent automatic backup from failing due to certain jobs running during daily maintenance, EPM Cloud disallows certain jobs from starting while the daily maintenance process is running.

The following jobs are prevented from starting during daily maintenance:

- Import Data
- Import Metadata
- Export Data
- Export Metadata
- Refresh Database
- Clear Cube
- Restructure Cube
- Compact Outline
- Merge Data Slices
- Optimize Aggregation

These jobs are prevented from starting whether they are jobs that are scheduled or jobs that are started on an ad hoc (unscheduled) basis.

For unscheduled jobs, this means that if you attempt to start a job during the daily maintenance process using the **Run Now** option on the **Schedule Jobs** page or if you submit a job from the listing page of your job definitions, the job will be prevented from starting. If the system prevents an ad hoc job from starting, an error message will display.

For example, if you view the jobs listed on the **Clear Cube** page while daily maintenance is running and then you click **Actions** and then **Submit**, an error message will display and the job will not start. Similarly, if you create a **Clear Cube** job on the **Schedule Job** page during daily maintenance and select **Run Now**, the system will prevent the job from starting and you'll see an error message.

If the system prevents a job from starting, the reason will be stated in the Job Details. If you've enabled email notifications for the Job Console, you'll receive an email notification when a job does not start. If you have a job that is scheduled to start during the daily maintenance process, it is recommended that you reschedule your job to start outside of the daily maintenance window. See [Scheduling Jobs](#).

Uploading and Downloading Files Using the Inbox/Outbox Explorer

Use the Inbox/Outbox Explorer to upload files to the server or download them to your computer.

To schedule an import or export job, see [Scheduling Jobs](#).

To upload or download files:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then **Inbox/Outbox Explorer**.
3. **Optional:** Filter by name, refresh the listing, and upload files from the server.
4. To upload a file from the server, click **Upload**. In the **Upload File** dialog box, click **Browse**, select the file to upload, and then click **Upload File**.
5. To download a file from the server, select the desired file, then click **...**, and then click **Download File**.
6. Click **Close** to close the **Inbox/Outbox Explorer** and return to the **Overview** tab.



Note:

There is an upload file size limit of 2GB. If your upload file exceeds the size limit, either select a smaller file or use EPM Automate to upload the larger file. For information about EPM Automate, see *Working with EPM Automate for Oracle Enterprise Performance Management Cloud*.

7

Setting up Strategic Modeling

Related Topics

- [Getting Started Checklist for Strategic Modeling](#)
- [Enabling Strategic Modeling in Planning Modules](#)
- [Enabling Strategic Modeling for Custom Applications](#)
You can enable Strategic Modeling for use with existing Custom and Planning Modules applications.
- [Working with Templates](#)
- [Creating a Strategic Modeling Model](#)
- [Exporting and Importing Model Data and Metadata](#)
You can export and import model data and metadata to and from a `.csv` file.
- [Setting Up Model Access Permissions](#)
- [Changing Model Properties](#)
- [Validating a Model](#)
Strategic Modeling includes a Model Validation tool that evaluates a model for common issues that can impact a model's performance.
- [Pushing Data Between Strategic Modeling and Planning](#)
- [Pushing Data from a Strategic Modeling Model to Multiple Strategic Modeling Models](#)
- [Pushing Data from a Strategic Modeling Scenario Rollup to a Strategic Modeling Scenario Rollup](#)
- [Managing Metadata with Model Change Management](#)
Use Model Change Management to copy metadata from a source model to one or more target models.

Getting Started Checklist for Strategic Modeling


Perform these tasks to set up Strategic Modeling:

1. Create an application, or identify an existing application to use.
For Planning, see [Creating a Planning Application](#).
For Planning Modules, see *Creating an Application in Administering Planning Modules*.
2. Enable Strategic Modeling. See [Enabling Strategic Modeling in Planning Modules](#) or [Enabling Strategic Modeling for Custom Applications](#).
3. Review the provided templates, and upload any custom templates required for your organization. See [Working with Templates](#).
4. Create a model from a template. See [Creating a Strategic Modeling Model](#).
5. Set up access permissions. See [Setting Up Model Access Permissions](#).

- After you enable Strategic Modeling, refresh the database. Click **Application**, then **Overview**, and then from the **Actions** menu, select **Refresh Database**, then **Create**, and then **Refresh Database**.

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Get an introduction to Strategic Modeling.	 Introduction to Strategic Modeling

Enabling Strategic Modeling in Planning Modules

Before users can start strategic planning, you must enable Strategic Modeling.

To enable Strategic Modeling in Planning Modules:

- From the Home page, click **Application**, and then click **Configure**.
- From the **Configure** list, select **Strategic Modeling**, and then click **Enable Features**.
- Log out and log in again to see the newly enabled feature.

There are no configuration tasks required for Strategic Modeling.

The Strategic Modeling provided templates are populated.

To enable Strategic Modeling for Custom applications, see [Enabling Strategic Modeling for Custom Applications](#).

Enabling Strategic Modeling for Custom Applications

You can enable Strategic Modeling for use with existing Custom and Planning Modules applications.

To enable Strategic Modeling for an EPM Enterprise Cloud Service Custom application:

- Sign into the Custom or Planning Modules application as a Service Administrator.
- Click **Application** and then **Overview**.
- From **Actions**, select **Enable Strategic Modeling**.
- If you are using navigation flows, complete a step to activate Strategic Modeling artifacts:
 - Reload Navigation Flows.
 - Sign out and then sign in again.

To enable Strategic Modeling in a Planning Modules application, see [Enabling Strategic Modeling in Planning Modules](#).

To set up Strategic Modeling, see [Setting up Strategic Modeling](#).

Working with Templates

Use templates to quickly create a model. Templates include a hierarchical set of accounts without time periods or data.

Strategic Modeling includes templates for commonly used account structures. You can use one of the provided templates, or create and upload custom templates.

Oracle provides these templates:

- Standard
- Utility
- Healthcare
- Retail
- Higher Education

These templates are available when you enable Strategic Modeling so you can get up and running quickly. You can't modify the templates provided by Oracle, but you can save a copy of a template and modify it for your business use case.

To review the account structure of the provided templates and any custom templates you've uploaded:

1. From the Home page, click **Strategic Modeling**, and then click **Templates**.
2. From the **Action** menu for the template you want to review, click **Open**.
3. Change the **Scenario**, **Dataview**, or **Account Groups** to show different sets of accounts.

You can also review and edit the account structure in the templates provided by Oracle using Strategic Modeling in Oracle Smart View for Office.

Creating and Uploading Custom Templates


You can create a custom template by saving a copy of one of the templates Oracle provides and customizing it. Review the account structure in the provided templates to determine which most closely suits your business needs, and then use Oracle Smart View for Office to customize and upload the template for use on the Web.

You can also use Smart View to upload templates you created from the on premise version of Oracle Hyperion Strategic Finance for use on the Web.

Changing the Owner and Access Permissions for Custom Templates

All users (except those with No Access) can view the out-of-box templates provided with Strategic Modeling. Administrators can change the owner and the access permissions for custom templates.

To change the owner or access permissions for custom templates:

1. From the Home page, click **Strategic Modeling**, and then click **Templates**.
2. From the **Action** menu next to the template you want to modify, click **Properties**.
3. Change the owner of the template if required.
4. Click **Permissions**.
5. Click  to add users or groups and assign them access to the template. For information about user and group permissions, see [Setting Up Model Access Permissions](#).
6. To replace the current permissions with default permissions, click **Inherit Default Access**.

7. Click **Apply** to save the changes.

Creating a Strategic Modeling Model

Administrators and Modelers can create Strategic Modeling models using templates—financial model frameworks that contain predefined reporting and modeling standards. Oracle includes several pre-defined templates to get you up and running quickly. You can also create a model that is based on an existing model.

Users check out models to work with them, or they can work with a copy of the model. When users work with a copy of a model, they can't save changes to the data or to the model.

When you create a model, the model is populated with a hierarchical chart of accounts, a time structure, reports, dataviews, account groups, and all the metadata from the template or the model it was created from.

You must have already created an application and enabled Strategic Modeling. If you want to use a custom template (customized using Oracle Smart View for Office) to create the model, it must already be uploaded.

To create a Strategic Modeling model:

1. From the Home page, click **Strategic Modeling**, and then click **Models**.
2. Click **Create**.
3. On the **General** page, specify the following options and then click **Next**.
 - Specify a model name and description.
 - Select whether to create the model from a template, from an existing model in the current application, or from a local `.alc` file, and then select the template, model, or file.
If you are creating a model from a local `.alc` file, the file must have already been converted in Smart View for use on the Cloud.
To integrate Strategic Modeling data with Financials, select the **Financials** template.
 - Select **Place at Root** to create a standalone model or a model that will be the parent of another model, or to create a hierarchical structure, clear **Place at Root** and select a model from **Parent Model**.
Creating a hierarchical model structure can be useful for scenario rollups and managing access control, or for visually organizing models.
 - Select a base currency and units.
Each model can have its own currency and units, independent of the application.
If you create a model from a local `.alc` file or from an existing file if you keep source data, these options are not available; the model is created using the units and currency of the original model.

Note:

You set up currency conversions in Smart View. See *Translating Currencies in Working with Strategic Modeling in Smart View*.

- If you created the model from an existing model, select **Keep Time Structure** if you want the new model to use the same time period structure as the existing model.

If you selected **Keep Time Structure**, you can select **Keep Source Model Data** to include the source model's data values in the accounts.

If you select **Keep Time Structure**, skip to step 5.

- If you created a model using the **Financials** template for integration with Financials, in **Select Entity**, select a Financials Entity dimension member. The model will be mapped to the selected Entity dimension member. This option is available only when creating a model from the **Financials** template. For more information, see *Integrating Data Between Strategic Modeling and Financials*.
4. On the **Calendar**, **Time Period**, and **Configure Years** pages, specify the options for building the calendar for this model.
 5. Review the model creation options, and then click **Create Model**.

The model is created with a chart of accounts and a calendar structure based on the options you selected.

You can convert an Oracle Hyperion Strategic Finance model to a Strategic Modeling model in Smart View. See *Working with Strategic Modeling in Smart View*.

Video

Your Goal	Watch This Video
Learn about creating a Strategic Modeling model.	 Creating Strategic Models in Oracle Enterprise Planning Cloud

Exporting and Importing Model Data and Metadata

You can export and import model data and metadata to and from a `.csv` file.

This option offers speed and flexibility in updating models—you can export the model data and metadata, modify it, and then import it back to the model. You can also seamlessly transfer model data from one model to another.

Exporting Model Data and Metadata

To export model data and metadata:

1. Open a model.
2. From the **Actions** menu, select **Export**.
3. From the **Export Type** list, select whether you want to export **Data**, **Metadata**, or **Data and Metadata**.
 - **Data**—includes **Account ID**, **Scenario**, **Value Type**, and all **Period** values.
 - **Metadata**—includes **Account ID** and **Account Name**.
 - **Data and Metadata**—includes all of the available information in the model (data and metadata): **Account ID**, **Account Name**, **Scenario**, **Value Type** and all **Period** values.
4. From **Dataview**, select **Input Only** or **Output Only**.
If the **Export Type** is **Metadata**, **Dataview** is not available and is set to the default.
5. Click in the **Scenario** box and select a maximum of five scenarios to export.
If the **Export Type** is **Metadata**, **Scenario** is not available and is set to the default.
6. Click **Export and Close**.

The `.csv` file is saved.

Modifying the Import File

Make any edits you want in the `.csv` file, and for faster processing, delete any rows with values you don't want to change.

Note that you can't make the following changes to the `.csv` file:

- Alter the account id.
- Modify account names for dimensioned accounts.
- Add additional rows.
- Modify metadata of dimensioned child accounts.

Importing Model Data and Metadata

To import model data and metadata:

1. Open a model.
2. From the **Actions** menu, select **Import**.
3. Browse to select the file and click **Open**.
4. Click **Import**.
The **Import Status** dialog box reports how many rows were imported and how many rows were rejected.

You can click **Export Results** to export the results of the import to a file.

Note the following about importing data:

- You can import a maximum of 200,000 cells at a time.
- Make sure you are importing data to a valid input cell.
- Make sure that the account supports the import operation.

Import File Format

Note the following about the import file format:

- You can load data for historical periods that accept input data.
- Do not include calculated accounts.

The following fields are accepted in the header:

- **Account** or **Measure**—the account key, for example, `v1080:010` or `v1000:020 | Laptops | North` (if the account has custom dimensions applied).
- **Name**—the name of the account, for example, `Total SG & A Expense Or Service Revenues / Laptops / North` (if the account has custom dimensions applied).
- **Scenario**—the name of the scenario to which data is imported.
- **Values**—either **Input** or **Output**. If **Values** is not specified, the default is **Output**.
- **Period**—For example, `2017` or `Q419`.

The following are required fields, depending on the type of import operation:

- **Data**—**Account** or **Measure**, **Scenario**, and **Period**. (**Values** is optional.)
- **Metadata**—**Account** or **Measure** and **Name**.

- **Data and Metadata**—**Account** or **Measure**, **Name**, **Scenario**, and **Period**. (**Values** is optional.)

Setting Up Model Access Permissions

Planning administrators are set up as Strategic Modeling administrators and can set up access permissions that define the type of access users and groups have to models and Strategic Modeling features—global permissions that apply to all models in the application, and permissions for individual models. When you assign access permissions to an individual model, any models nested under that model in the model hierarchy inherit the access permissions from the parent.

If a model is inheriting access permissions (either from the global level or from a parent), as long as you have not made any changes to the individual model's access permissions, it will continue to inherit any changes to access permissions. However, once you modify an individual model's access permissions, it no longer inherits any permission changes from either the global level or the parent (depending on where it inherited permissions from).

Available roles include Modeler, Analyst, Viewer, and No Access. See [About Model Access Permissions](#) for more information about these roles. These permissions also apply to models when you work with Strategic Modeling in Oracle Smart View for Office.


Model access details:

- Planning users (except Administrators) are available in the Users list to assign model access. Note that access permissions in Strategic Modeling are unrelated to those in Planning. You must give users access to Strategic Modeling models even if they have access to the Planning application.
- When a model is first created, it is set up with Default permissions and Owner permissions. You can't delete these. Any newly added user or group gets the default permissions.

By default, the Default permissions and new users and groups have the No Access role. If you assign global access, all new models inherit that access.

- When a user has no access to a model, no model actions or options are available. When a user has no access to a menu item, it doesn't appear on the **Actions** menu.

Video

Your Goal	Watch This Video
Learn about setting up model access permissions.	 Setting Up Model Access for Strategic Modeling in Oracle Enterprise Planning Cloud

About Model Access Permissions

Administrators can perform these tasks:

- Enable Strategic Modeling
- Assign access permissions
- Create, delete, and modify models and scenario rollups
- Upload templates, assign access to custom templates, and delete templates

Users' access to scenario rollups comes from the Global Access.

Table 7-1 Model Access Permissions


Role	Access
Modeler	<ul style="list-style-type: none"> • Models: <ul style="list-style-type: none"> – Create – Open - Check out and check in – Open as Copy – Save as Local File – Delete – Model Data Maps • Account View: All options are available <ul style="list-style-type: none"> – Find Account – Account Forecast – Subaccounts – Goal Seek – Scenario Manager – Audit Trail – Simulations – Enter data, Calculate, and Save – Change the Point of View to display different account groups, scenarios, and dataviews • Scenario rollups: All options are available • Templates: View templates, delete custom templates, import templates • Reports: All options are available • In Oracle Smart View for Office: <ul style="list-style-type: none"> – Models: Copy Local File to Server, Delete Model, Input Status, Account Groups, Funding Options, Required Elements, Template Name – Time management: Time tab. All options are available – Scenarios: All options are available – Dimensions: All options are available <ul style="list-style-type: none"> * Create Custom Dimensions * Assign Custom Dimensions
Analyst	<ul style="list-style-type: none"> • Models: <ul style="list-style-type: none"> – Open - Check out and check in – Open as Copy – Save as Local File • Account View <ul style="list-style-type: none"> – Find Account – Account Forecast – Goal Seek – Audit Trail – Enter Data, Calculate, and Save – Change the Point of View to display different account groups, scenarios, and data views • Templates: View templates • Reports: View reports

Table 7-1 (Cont.) Model Access Permissions

Role	Access
Viewer	<ul style="list-style-type: none"> • Models: <ul style="list-style-type: none"> – Open as Copy – Save as Local File • Account View <ul style="list-style-type: none"> – Find Account – Goal Seek – Audit Trail; however, viewers can't make changes to inputs – View the grid in read only mode (can't Enter Data or Save) – Change the Point of View to display different account groups, scenarios, and data views • Templates: View templates • Reports: View reports
No Access	No access

Specifying Global Access Permissions for All Models


To specify global access permissions that apply to all models:

1. From the Home page, click **Strategic Modeling**, then **Models**, and then **Global Access**.
2. Specify a role for each user or group.
3. Click  to add users or groups and assign them global access.
4. Click **Apply**.

Specifying Access Permissions for a Model

If you set up global access permissions, each individual model inherits access permissions from the global access list. You can modify the permissions for each model. Children models inherit permissions from the parent model, unless the parent has no specific permission, in which case they inherit the global access permissions. Once you modify an individual model's access permissions, it no longer inherits any permission changes from either the global level or the parent (depending on where it inherited permissions from).

To specify access permissions for a specific model:

1. From the Home page, click **Strategic Modeling**, and then **Models**.
2. From the **Action** menu next to the model you want to modify, click **Properties**.
3. Click **Permissions** and then specify the user and group permissions for the model.
4. Click  to add users or groups and assign them access to the model.
5. To replace the current permissions with default permissions, click **Inherit Default Access**.
6. Click **Apply** to save the changes.

Changing a Model's Owner

You can change the owner of a model.

To change a model's owner:

1. From the Home page, click **Strategic Modeling**, and then **Models**.
2. From the **Actions** menu next to the model you want to modify, click **Properties**.
3. Change the owner, and then click **Apply**.

Changing Model Properties

Administrators and model owners can change the properties of a model.

To change a model's properties:

1. From the Home page, click **Strategic Modeling**, and then **Models**.
2. From the **Actions** menu next to the model you want to modify, click **Properties**.
3. Change the properties, and then click **Apply**:
 - **Owner**—Specify the account owner.
 - **Default Units**—Specify the default units for the model.
 - **Default Currency**—Specify the default currency for the model.
 - **Account View Input Decimal Places**—Specify the number of decimals to display for input accounts.
 - **Account View Output Decimal Places**—Specify the number of decimals to display for output accounts.

Validating a Model

Strategic Modeling includes a Model Validation tool that evaluates a model for common issues that can impact a model's performance.

Resolving reported issues helps ensure that the model follows guidelines that lead to optimal performance. It's especially helpful when a model can't be calculated due to a circular reference—the model validation log file includes the sequence of cells that produce the circular reference.

To use the Model Validation tool:

1. From the Home page, click **Strategic Modeling**, and then click **Models**.
2. Open the model you want to validate.
3. From the **Actions** menu, select **Validate Model**, and then click **Continue** to generate the report.
4. Specify the location for the file, and then click **Save**.
5. Review the file, and then resolve the reported issues.

The Model Validation tool checks for the following issues.

Reforecasting in the Balance Loop

The Model Validation tool calculates at least one scenario in the model and reports in the log if a balancing loop is executed more than once for any given time period.

Excess balancing loops can occur when a model contains months and or quarters where the values depend on a year-end value that is affected by changes in the balancing loop that is

used by Funding Options, such as with tax forecasting. For example, it's impossible to know before the end of the year whether a model is going to generate a tax loss that can be carried back against taxable profits from earlier years. Trying to reforecast the first month of the year to spread the tax refund calculated at year-end back to that period (and each of the other months in between) results in executing the balancing loop a minimum of 72 times in a year instead of 12, so that the calculations take at least six times as long to execute.

Balances and Flows for User-Defined Accounts

In some cases, models calculate more quickly when user-defined accounts are defined as **Balances** (last component period value) or **Flows** (sum of component period values) rather than **Ratios**.

The Model Validation Tool evaluates formulas that are used to calculate user-defined accounts, and if an account should possibly be a **Balance** or a **Flow**, it is reported in the log. It also evaluates formulas for user-defined accounts and reports a message in the log if a formula does not parse.

The Model Validation Tool might report more accounts that should be converted to a **Balance** or **Flow** as you change the setting for other accounts in the model.

Freeform Formulas and the Allow Overrides Flag

When using a freeform forecast method for an account that is being rolled up into a business case during a scenario rollup, if the account accepts input (`@input` or `@scalar` appears in the formula that you've entered), then the account should have the **Allow Overrides** flag set. This way, if the model is a parent in a scenario rollup, Strategic Modeling can generate an override if needed to get the correct result without having to change the setting of the **Allow Overrides** flag.

For account versions that belong to a business case, any freeform forecast method that accepts input and does not have the **Allow Overrides** flag turned on is reported in the log.

Missing Accounts in Formulas

Any missing accounts in formulas are reported in the log.

Circular Calculation

Circular calculations are reported in the log. The log displays all of the cells that are part of the circular loop, showing the account key and time period for the cell.

Referencing Data Outside the Actual Scenario While Calculating the Actual Scenario

If the scenario calculated during the model validation uses Actuals, and those calculations use leading time period references that access data outside of the Actual scenario, this information is reported in the log.

Unrecognized Exceptions

When something unexpected occurs, the exception information is reported in the log. You can't resolve this error on your own. Contact Oracle Support and provide the model and the audit log.

Pushing Data Between Strategic Modeling and Planning

You can push data between Strategic Modeling and Planning in two ways:

- **Data Maps and Smart Push**—Provides an easy-to-use interface that automatically maps same-named dimensions and members and allows you to define the mapping between other dimensions and members. You can define complex mappings to or from a single dimension to or from multiple dimensions. The feature also provides a Microsoft Excel template to further simplify setting up detailed mappings and import them using a familiar interface. Using Data maps and Smart Push works for most use cases. See [Pushing Data Between Strategic Modeling and Planning Using Data Maps](#).
- **Groovy Rules**—Provides a powerful rule-based method for creating complex data maps using Groovy scripting language. Use Groovy rules to define complex mappings. For example, you can define a Groovy rule that pulls data from Planning for targeted regions based on the current form, such as only from edited cells. You can also perform calculations on data before pushing it, such as applying a scaling factor. See [About Groovy Business Rules](#) and [Using Groovy Business Rules with Strategic Modeling](#).

 **Note:**

In a Groovy rule, Smart Push is supported only when the source cube is Planning, not Strategic Modeling.

Using Groovy Business Rules with Strategic Modeling

You can create Groovy business rules to push data between Planning cubes and Strategic Modeling models. For information about designing Groovy rules, see *Creating a Groovy Business Rule* in *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud* and *Using Groovy Rules* in *Administering Planning*.

Video

Your Goal	Watch This Video
Learn about using Groovy rules with Strategic Modeling.	 Integrating Strategic Models Using Groovy Rules

Groovy Business Rule Examples

Example Groovy scripts are available.

To see example Groovy scripts:

1. See the Java API Reference for Oracle Enterprise Performance Management Cloud Groovy Rules, <http://docs.oracle.com/cloud/latest/epm-common/GROOV/>.
2. Do one of the following:

- Under **Example Groovy Scripts** on the main page, click the word "here" to view sample scripts:
[Example Groovy Scripts](#)

The example Groovy scripts provided here demonstrate the syntax and power of the EPM Groovy object model.



- Under **All Classes** in the left pane, click a class to see the examples for that class.

For example, to see Strategic Modeling examples, click the StrategicModel class in the left pane.

Pushing Data Between Strategic Modeling and Planning Using Data Maps

You can push data between Strategic Modeling and Planning using data maps. You can define data maps that push data:

- From a Strategic Modeling model or scenario rollup to a Planning cube.
- From a Planning cube to a Strategic Modeling model.
- From a Planning cube to a Strategic Modeling scenario rollup.

Advanced options let you define complex mappings to or from multiple dimensions to or from a single dimension and between members with different names. These advanced data map options are available only if Strategic Modeling is enabled and is a source or target in the data map.

Administrators have privileges to create, edit, and run data maps.

To create a data map:

1. From the Home page, click **Application**, then **Data Exchange**, and then click **Data Maps**.
2. Click **Create**.
3. Enter a name and description for the data map.
4. Under **Source**, select the source for the data. You can select:
 - A Planning input cube from the available cubes for the current application.
 - A Strategic Modeling model. You can select from any models in the selected application.
 - A Strategic Modeling scenario rollup. You can select from any scenario rollups in the current application. When the source is a scenario rollup, metadata is pulled from the root model of the scenario rollup.

Note:

If you don't see your Strategic Modeling model in the list, from the **Actions** menu, select **Synchronize**.

You can perform synchronize action in two ways:

- a. In the initial data maps screen (step 1) by accessing it through **Actions** of a listed data map.
- b. During creation/modification of a data map, by using the **Actions**
 - Planning to Planning—Updates metadata changes in the target Strategic Modeling model.
 - Planning to Strategic Modeling—Updates metadata changes in the target Strategic Modeling model.
 - Strategic Modeling to Planning—Updates only metadata in the source Strategic Modeling model.
 - Strategic Modeling to Strategic Modeling—Updates the metadata changes for both the source and target models.

5. Under **Target**, select:

- A Planning input cube (Block Storage) or reporting cube (Aggregate Storage) from the available applications, if the source is a model or a scenario rollup.
- **Select Model** to select a Strategic Modeling model if the source is a Planning input cube (Block Storage).
- **Select Scenario Rollup** to select a Strategic Modeling scenario rollup if the source is a Planning input cube (Block Storage).

If you don't see your Strategic Modeling model or scenario rollup in the list, from the **Actions** menu, select **Synchronize**.

6. Define how to map dimensions between source and target:
Under each mapped dimension, click **Select**, and then select the artifact or artifacts to use.

These dimensions are automatically mapped:

- **Model** in Strategic Modeling and **Entity** in Planning.
You can select multiple models (from a list of all the models in the application) as a target. For example, you might have multiple entities in Planning that map to multiple models in Strategic Modeling. Multiple selections must have a one to one mapping between model and entity.
- **Scenario** (or **Business Case** if the source or target is a scenario rollup) in Strategic Modeling to **Scenario** in Planning. Multiple selections must have a one to one mapping between Scenario or Business Case in Strategic Modeling and Scenario in Planning.
- **Account** in Strategic Modeling to **Account** in Planning. You can select multiple accounts.

 **Tip:**

Account members with the same name are automatically mapped (based on the **Description** in Strategic Modeling and the **Name** in Planning.) Click **Map** in the **Account** row to see the mappings.

 **Tip:**

If you know all of the member names, you can skip this step and enter the member names directly in **Advanced Data Maps**. See [Defining Advanced Data Maps](#).


- Dimensions with the same name.

Other dimensions are in the **Unmapped Dimensions** list.


7. Map any remaining dimensions from the **Unmapped Dimensions** list if required. Click the arrow next to a dimension in the **Unmapped Dimension** list to move it to the Mapping area. Select the dimension to map it to, and then click **Select** to select the members to map. For any unmapped dimensions, select a member.
8. Map any custom dimensions.
Map custom dimensions in the same way you map base dimensions. Members associated with a custom dimension are shown under the custom dimension rather than under the Account dimension.

If the data map includes accounts that aren't part of the custom dimension, map the root of the custom dimension in Strategic Modeling to a specific member in Planning. Data for accounts that aren't part of the custom dimension are pushed to this member.

9. If required, you can map to or from multiple dimensions to or from a single dimension:


- a. Click **Actions**  next to a mapping row and then select **Add Source Mapping** or **Add Target Mapping**.
- b. Select the additional dimension to map, and then select the members to map. For example, you might want to map the **Time** dimension in Strategic Modeling to the **Years** and **Period** dimensions in Planning.

Or, you might want to map the **Business Case** in Strategic Modeling to **Scenario** and **Version** in Planning. Including the **Version** dimension allows runtime input when you run the scenario rollup.

10. To exclude source members from the data map, click **Actions**  next to a mapping row and then select **Add Exclusion**. Define the member or members to exclude and then click **OK**. The excluded member or members are shown on the Data Maps page. Excluding members while moving data is useful if you don't want to overwrite certain data at the target location or if you want to avoid getting warnings if data at the target location is not present. Also, exclusions can ignore specific source member data while data is required for all other source members.

When excluding members from a dimension, the member list for the dimension must contain at least one member that is not on the excluded member list in order for the data map to successfully save and run.

To remove one or more excluded members from the exclusion list, click the members in the exclusion list, and remove the member or members from the list using the Member Selector.

To remove the entire exclusion, click **Actions**  next to a mapping row and then select **Remove Exclusion**.

 **Tip:**

If you set up Smart Push for a form, you can also exclude members from the Smart Push. See [Configuring Smart Push for a Form](#). When you define Smart Push for a Planning form to push data to Strategic Modeling, the members defined for the Smart Push must match the members defined in the data map.

11. If the member names don't match in the source and target, or when mapping to or from multiple dimensions to or from a single dimension, you must define an advanced data map. See [Defining Advanced Data Maps](#). You can also use advanced data maps to define mappings when you know all the member names.
12. Click **Save and Close** at any time. If the data map definition is not yet complete, you will receive an error, but you can save the data map as a draft so you can continue to work on it at another time.
13. Associate the data map with a model or scenario rollup:
 - If the source is a model, you can optionally associate the data map with a model. See [Associating Data Maps with a Model](#).
 - If the source is a scenario rollup, you must associate the data map with a scenario rollup. See [Associating Data Maps with a Scenario Rollup](#).

 **Note:**




Planning to Strategic Modeling scenario rollup data maps are not available for association in Planning forms.

- Optionally, specify options that define how to execute the data map. See [Defining Strategic Modeling Data Map Options](#).

For Planning data map options, see Defining Data Map Options.

For information about running data maps, see [Running a Data Map](#).

Videos

Your Goal	Watch This Video
Learn about creating data maps to move data between Strategic Modeling and Planning.	 Creating Data Maps and Moving Data from Strategic Models After Consolidation
	 Creating Data Maps to Move Data between Planning Cubes and Strategic Models
Learn how to move data using data maps from Planning to a Strategic Consolidation Model, and between models within a Strategic Consolidation Model.	 Mapping Data into Business Cases for Parent Models


Defining Advanced Data Maps

When member names don't match in the source and target, or when mapping to or from multiple dimensions to or from a single dimension, you must define an advanced data map.

- Click **Map** in a mapping row to define the advanced mapping.
For example, you might want to map multiple accounts from Planning into a single account in Strategic Modeling.





The **Edit Data Map** page lets you define mapping on each tab. Tabs include **Basic Info**, **Source Selection**, **Target Selection**, a tab for each mapped dimension, and if they exist, **Unmapped Source** and **Unmapped Target** dimensions.

The **Source Selection** and **Target Selection** tabs contain a superset of the details to be mapped on the other tabs.


- Click a tab to define the mapping details. For each dimension, the Source members are listed.
 - For each Source member where the member names between source and target are different, add the Target member. (Target members must be level zero members in the hierarchy).
 - If you've already excluded members, they are listed in the **Source Selection** tab, in the **dimension(Excluded)** column.
 - To exclude members from the data map, in the **Source Selection** tab, click the column header for the dimension you want to exclude a member from, click **Add Exclusion**  , and then in the **dimension(Excluded)** column, define the members to exclude.
 - If you exclude a member that is already mapped, click the tab for the dimension and update the mapping for the member.


- To remove a member from the **Excluded** list, select the member and then press the **Delete** key. If you remove a member from the **Excluded** list, click the tab for the dimension and add the mapping for the member.
- To remove the exclusion, click the column header for the dimension and then click

Remove Exclusion 

- Specify an operator if required. The default operator is +. The operator for a row defines the operation to use for the current row.
For example, to have multiple accounts from the source aggregate and map to a single account in the target, add a row for each member in the source, each mapped to the same target member. By default, the + operator for each row defines the aggregation.
Or, you might want to map multiple periods in a cube (Jan through Dec) to a single time period in a Model (2018).
- You can **Copy Rows**  or **Paste Rows**  or copy and paste data from one tab to another.
- Add as many rows as needed to define all the members to map. Click **Insert Row**  to add a mapping definition between a source and target member.
- If needed, click **Delete Invalid Entries**  to clear any mapping rows where the source is invalid and clear any invalid target members.

3. When mapping from multiple dimensions to a single dimension, for example from Years and Period in Planning to Time in Strategic Modeling, the **Edit Data Map** page is populated with all the possible source combinations. Select the corresponding target members for each source combination you need.
If you've defined any exclusions, the excluded members are not listed.

If there are some source combinations you don't need to map to, select the row and then click **Delete Row** . This source combination will not be automatically populated again if you return to the **Edit Data Map** page.

If you later want to see the deleted source combinations, click **Populate Detailed Mappings** . The **Edit Data Map** page is updated to show all possible source combinations.

4. Click **Done**.

Note the following about mapping members:

- When member names in source and target match and are automatically mapped, they are not listed on the Mapping Details page.
- You can only select target members that are listed on the Target Selection tab. If you need a different member, return to the Data Maps page and select it from the Target member list. (If you didn't enter members on the Data Maps page, you're not restricted in this way.)

To simplify defining an advanced data map, you can export the data map definition to Excel, edit the data map template in Excel, and then import it. See [Using Microsoft Excel to Define Advanced Data Maps](#).

About Data Maps and Custom Dimensions

Note the following when defining data maps when some of the Strategic Modeling accounts in the data map are associated with custom dimensions and some are not.

When creating a data map from Planning to Strategic Modeling, the data moves based on the following rules.

- When the root of the dimension in Strategic Modeling is part of the detailed mapping:
 - For accounts where this dimension is applicable, the root dimension mapping is ignored. (Data can't be written to the root for valid accounts.)
 - For accounts where this dimension is not applicable, only the root dimension mapping is considered. (Data can't be written to the nonexistent leaf members.)
 - For dimensions that have no members in Strategic Modeling, the data is always written to the root. (The root member is the only available member.)
- When the root of the dimension in Strategic Modeling is not part of the detailed mapping:
 - For accounts where this dimension is applicable, data movement occurs as defined in the data map definition. (Data can be written to all the members in the mappings.)
 - For accounts where this dimension is not applicable, each member in the target is replaced with the root dimension. The aggregated data for all the members is moved to the root of the Strategic Modeling dimension.

If this is not the behavior you want, make sure you map the appropriate member in Planning to the root dimension in Strategic Modeling.
- When the dimension is part of the Unmapped Dimensions (for the Target):
 - For the accounts where this dimension is applicable, the data is pushed to the member defined in the target.
 - For the accounts where this dimension is not applicable, the data is pushed to the root.

When creating a data map from Strategic Modeling to Planning, the data moves based on the following rules.

When the root of the dimension in Strategic Modeling is part of the detailed mapping:

- When the custom dimension has multiple members selected, the custom dimension's root is applicable only for members whose custom dimension is not enabled.
- As part of data map validation, a check mandates mapping the custom dimension's root to avoid data duplication when custom dimensions are enabled. The root member is ignored if the section for the Custom dimension has multiple members in the mapping.
- Members assigned to the custom dimensions push the child members' values to Planning. If only the root member is defined in the data map, then the root member is pushed to Planning.

Using Microsoft Excel to Define Advanced Data Maps

To simplify defining an advanced data map, use Microsoft Excel to define the data map.


1. Define the basic dimension mappings in the **Data Maps** page.
2. From the **Actions** menu, select **Export Data Map**, and then open the file with Microsoft Excel.
3. Update the Source and Target tabs if needed, and the detailed mappings in each tab of the Excel worksheet, and then save it.
4. In the **Data Maps** page, from the **Actions** menu, select **Import Data Map**, and then save the data map.

Videos

Your Goal	Watch This Video
Learn about importing data maps.	 Importing Data Maps and Moving Data from Strategic Models to Planning Reporting Cubes
	 Using Excel Data Maps for Moving Data between Planning Cubes and Strategic Models

Associating Data Maps with a Model

When the source of a data map is a model, you can associate the data map with the model and specify that the data map should run when you check in the model.

1. From the Home page, click **Strategic Modeling** and then click **Models**.
2. From the **Action**  menu next to the model you want to associate a data map with, click **Properties**, and then click **Data Maps**.
3. From the **Available Data Maps** list, click the data map that you want to associate with the model and then click



to move the data map to the **Associated Data Maps** list.

Any data maps that have this model as a source or that have this model in the source section of the detailed mapping for the model are listed.

Tip:

You can also drag and drop the data map to the **Associated Data Maps** list. You can associate multiple data maps with a model.

4. Select an option for **Run On** to indicate when the data map should run:
 - **Run on Check-In**—Run the data map when the model is checked in.
 - **Data Map Import or Check In**—Run the data map when another data map runs that imports data to the model. (Importing the data implicitly checks in the model.) You can automatically run up to three levels of associated data maps with this option.
5. Click **Apply**.

You can also delete a data map association with a model.

Associating Data Maps with a Scenario Rollup

Strategic Modeling operates on an individual model in a scenario rollup as follows:

1. **Refresh** Phase: Refresh data maps bring data into scenario rollups from outside sources, such as a Planning cube or Strategic Modeling models that are not part of the rollup. They are run before the scenario rollup if you select the **Refresh** option for the business case in **Run Rollup and Data Maps**.

2. **Before** Phase: Execute any data maps that are assigned to run before the model is processed. These should move data into the current model. These data maps run automatically during a scenario rollup after the source model has been rolled up.
3. **Process Model**: Models that are leaf nodes are prepared to be rolled up into their parent nodes, making sure that they are completely calculated, including any required currency translation. Models that are parent nodes roll up their child nodes and are then completely calculated, including any required currency translation.
4. **After** Phase: Execute any data maps that are assigned to run after the model is processed. These should move data from this model into other models that need the results from the current model. These data maps run automatically during a scenario rollup when they are associated with the scenario rollup.
5. **Publish** Phase: Publish data maps push final rolled up data to external targets, for example, Planning, after a scenario rollup is complete if you select the **Publish** option for the business case in **Run Rollup and Data Maps**.

 **Note:**

- Planning to Strategic Modeling scenario rollup type data maps are only available for association in the **Refresh** phase for the models present in the scenario rollup on which the data maps are defined. These will be considered as external source data maps with respect to the scenario rollup.
- Strategic Modeling scenario rollup to Strategic Modeling scenario rollup type data maps are available for association in the **Before/After** phase of the models within the respective scenario rollup upon which the data maps are defined.
- In a Strategic Modeling scenario rollup, let's take a particular scenario. If a data map is associated as a **Before** data map for Model A and if this data map is setup to have Model A as a target model and if Model A is a parent model, the data map results could be overwritten by the scenario rollup from its children.

To associate data maps with a scenario rollup:

1. From the Home page, click **Strategic Modeling** and then click **Scenario Rollups**.
2. Open the scenario rollup you want to associate data maps with.
3. Click a model in the scenario rollup hierarchy, and then click the **Data Maps** tab.
4. From the drop-down list, select when you want the data map to run—**Refresh**, **Before**, **After**, or **Publish**.

The data maps list is filtered depending on your selection and is based on the data map definition and whether the model is part of the source or target.

For example:

- If the currently selected model is either the target of the data map or is present in the target section of the dimension mapping for the model, the data map can run before the model rolls up and will be listed if you select **Before**.
 - If the currently selected model is either the source of the data map or is present in the source section of the dimension mapping for the model, the data map can run after the model rolls up and is listed if you select **After**.
5. From the **Available Data Maps** list, click the data map that you want to associate with the model, and then click



to add the data map to the **Associated Data Maps** list.



Tip:

You can also search for a data map or drag and drop the data map to the **Associated Data Maps** list.


6. Make sure **Run on Rollup** is selected so the data map runs when you run the scenario rollup.
7. Click **Apply**.
8. Repeat this process for any models, including the root model, with which you want to associate data maps.
9. Click **Close**.

Notes:

- Data maps associated with the Before or After phase will not run when a rollup is in the Ready state, unless models are altered by Refresh phase data maps.
- During the scenario rollup, data maps that are associated with the After phase that push data from a parent down to one or more children can trigger a two-pass rollup.
- When running scenario rollups, when the source of a data map is either Planning or a Strategic Modeling model outside the current scenario rollup, the data map is considered to be an external source data map. This type of data map is typically used to prepare the models for scenario rollup by importing the data from external sources.



Tip:

To see all the data maps associated with the models in the scenario rollup, from the **Actions**  menu, select **Set Data Maps**.

Defining Strategic Modeling Data Map Options

Specify data map options that apply to Strategic Modeling data maps.



Note:

For Planning data map options, see Defining Data Map Options in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

1. View the **Data Maps** listing page.
2. Select an existing data map or click **Create** to create a new one.
3. Click **Options** (or if creating a new data map, click **Actions**, and then click **Options**).
4. Specify data map options, and then click **OK**.

Table 7-2 Strategic Modeling Data Map Options

Data Map Option	Description
Import #missing value as (Only available for data maps where Planning is the source and Strategic Modeling is the target)	<ul style="list-style-type: none"> • Ignore: Ignores the imported #missing value and retains the existing value in the target cell. • Zero As Output (default): Imports the #missing values and sets their output value to 0 in the target cells. • NaN: Imports the #missing values and sets their output value to NaN (Not a Number) in the target cells. • Zero As Input: Sets the input cell to 0, no back calculation required.
Import NaN value as (Only available for data maps where Strategic Modeling is both the source and the target)	<ul style="list-style-type: none"> • Ignore: Ignores the imported NaN value and retains the existing value in the target cell. • Zero As Output (default): Imports the NaN value and sets the output value to 0 in the target cells. • NaN: Imports the NaN values and sets their output value to NaN in the target cells. • Zero As Input: Sets the input cell to 0, no back calculation required.
For cells that are not being imported	<ul style="list-style-type: none"> • Preserve Input Values(default): Preserves the existing input data values in the model during the data import • Preserve Output Values: Preserves the existing output data values in the model during the data import
Push data for mapped custom dimension root	When the mapping contains both the parent and child members of the custom dimension, this option pushes the data for the custom dimension root to the target.

Running a Data Map

Data maps run automatically in the following situations:

- If the source is a model and you associated the data map with the model and selected **Run on Check-In**, when you make a change to the model and check it in, the data map runs and Smart Push pushes the data to Planning.
- If the Target is a model, and the target has an associated a data map with the **Run on** option of **Data Map Import or Check In**, when the first data map completes, the data map associated with the Target model runs. (Importing the data implicitly checks in the model.)

For example: When a model is checked in, and this model has a data map associated with it that pushes data to another model that has a data map associated with it that has the option **Data Map Import or Check In**, that data map will run after the first data map completes, without having to open the second model:

- Model 1 has data map 1 associated with it that pushes data from Model 1 to Model 2, with the **Run On** option **Data Map Import or Check In** or **Check In**.
- Model 2 has data map 2 associated with it that pushes data from Model 2 to Model 3, with the **Run On** option **Data Map import or Check In**.
Data map 2 runs after Model 1 is checked in.
- Model 3 has data map 3 associated with it that pushes data from Model 3 to a Planning cube (BSO or ASO), with the **Run On** option **Data Map Import or Check In**.
Data map 3 runs after data map 2 is finished.

- If the source is a scenario rollup and you associated the data map with the scenario rollup and selected **Run on Rollup**, in **Scenario Rollups**, click **Run**. On the **Run Rollup and Data Maps** page, select **Refresh** and/or **Publish** to run data maps associated with those phases. **Before** and **After** data maps run automatically.
If you mapped the **Business Case** in Strategic Modeling to **Scenario** and **Version** in Planning, when you run the scenario rollup, you have the option to select **Overwrite Target Version**, which overwrites the **Version** defined in the data map.
If Version is in the Unmapped section, the selected **Overwrite Target Version** is ignored.
- If the source is a Planning cube, associate the data map with a form and specify it to **Run on Save**. See *Configuring Smart Push for a Form*. You can associate multiple data maps with a single form.

If the source is a model or a Planning cube, you can also run data maps from the Data Maps page: From the Home page, click **Application**, then **Data Exchange**, and then click **Data Maps**. From the **Actions** menu for the data map you want to run, select **Clear and Push Data**.

 **Note:**

The **Clear and Push Data** option is unavailable for Planning to Strategic Modeling scenario rollups.

To check the status of the data map and Smart Push job, from the Home page, click **Application**, and then click **Jobs**. Click the job name to see information and status about the Smart Push job. If there is an error, click **Error** to see details to help you resolve the error. For more information about data maps and Smart Push jobs, see *Checking Real Time Progress Status for Data Maps and Smart Push in Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

 **Note:**

Data maps that push data from Planning to multiple Strategic Modeling models and have missing accounts in the target will be ignored and the data will be pushed for all valid accounts. The job details will provide a listing of dimension members that were ignored because they weren't available in the target model.

Integrating Data Between Strategic Modeling and Financials

You can push data between models in Strategic Modeling and income statements in Financials using the provided template and data maps.

To complete this task, both Strategic Modeling and Financials must be enabled, in any order. **Income Statement** must be enabled in Financials.

1. Enable Financials with **Income Statement** enabled, and then create a Financials application.
See *Configuring Financials in Administering Planning Modules*.
2. Enable Strategic Modeling, and then create a new model.
 - On the **General** page of the **Create New Model** wizard, select **Create Model From Template**, and then select **Financial** from the **Select Template** list.

- In **Select Entity**, select a Financials Entity dimension member. The model will be mapped to the selected Entity dimension member.
- If the Planning application is multi-currency, select a currency from the **Currency** list. If the Planning application is single currency, this option is not available, and it defaults to the application's currency.
- The **Calendar**, **Time Period**, and **Configure Years** pages of the **Create New Model** wizard are not available when you create a model from the Financial template. The **Start and End Period** dates are set based on the Planning application. **Year Configuration** is monthly.

When you create the model, two data maps are created. The data maps' detailed mappings are automatically populated between the dimension members in Strategic Modeling and in Financials. You can optionally view the detailed data maps: From the Home page, click **Application**, then click **Data Exchange**, and then click **Data Maps**.

- **<Model_Name>_SMtoPLDatamap** pushes data from Strategic Modeling to the Target version in Financials. By default, the data map is associated with the model you just created and is set to run when you check in the model.
- **<Model_Name>_PLtoSMDatamap** pushes data from the Working version in Financials to Strategic Modeling.

For more details about enabling Strategic Modeling, see [Enabling Strategic Modeling in Planning Modules](#).




For more details about creating a Strategic Modeling model, see [Creating a Strategic Modeling Model](#).

3. To push data from Strategic Modeling to Financials:
 - a. Check out the Strategic Modeling model, enter data, and then calculate the scenario or all scenarios.
 - b. Check in the model.
If the data map is set to run on check-in (the default), when you check in the model, the data map runs and the Smart Push job is submitted.

 **Tip:**

To check the status of the job, from the Home page, click **Application** and then click **Jobs**.

In Financials, open the income statement to review the data that was pushed. From the Home page, click **Financials**, then click **Revenue**, and then click **Income Statement**.

4. To push data from Financials to Strategic Modeling use one of these methods:
 - Run the data map from the **Data Maps** page: From the Home page, click **Application** , then **Data Exchange** , and then click **Data Maps**. From the **Actions**  menu for **<Model_Name>_PLtoSMDatamap**, select **Clear and Push Data**.
 - Associate the **<Model_Name>_PLtoSMDatamap** data map with a form and set it up for Smart Push. See [Configuring Smart Push for a Form](#).

If you later enable additional accounts in Financials, edit the data maps to add the detailed mapping between the accounts in Financials and the accounts in Strategic Modeling. For more information about editing data maps and detailed mappings, see [Defining Advanced Data Maps](#).

 **Note:**

You can make a copy of the data maps before editing them so you can keep the original data map definition.

 **Note:**

Custom dimensions in Strategic Modeling and a custom chart of accounts in Financials are not supported when pushing data between Strategic Modeling and Financials.

Pushing Data from a Strategic Modeling Model to Multiple Strategic Modeling Models

You can push data from a Strategic Modeling Model (Source) to Multiple Strategic Modeling Models (Target) controlled by different properties specified at the account level.

Pushing Data from a Strategic Modeling Model to Multiple Strategic Modeling Models Using Data Maps

You can push data from a Strategic Modeling Model to Multiple Strategic Modeling Models using data maps. You can define Model to Model Data Maps that push data.

Administrators can create, edit, and run data maps using the procedures in this guide. Modelers can create, edit, and run data maps for models they have Modeler access to using the procedure described in "Pushing Data from Model to Model Using Data Maps" in *Working with Planning*.

To create Model to Model Data Maps:

1. From the Home page, click **Application**, then **Data Exchange**, and then click **Data Maps**.
2. Click **Create**.
3. Enter a name and description for the data map.
4. Under **Source**, select the source for the data: Select Model.
The Select **Model** page is displayed.
5. Select a Strategic Modeling model and click **Select**.
If you don't see your Strategic Modeling model in the list, from the **Actions** menu, select **Synchronize**.
6. Under **Target**, select **Models**.

 **Note:**

This option is available only when a Strategic Modeling model is selected on the source.

7. Click **Select** under the Target section of the dimension mapping row for Model.
The Select Members page is displayed.
8. Select the Models and click **OK**.

 **Note:**

The Target can be multiple models. You can push the data from one source model to multiple target models.

If you don't see your Strategic Modeling model in the list, from the **Actions** menu, select **Synchronize**.

9. Click **Select** in the Source section of the dimension mapping row for Account.
The Select **Members** page is displayed.
10. Select the accounts and click **OK**.

 **Note:**

Notice that selected Account Members are displayed in both Source and Target columns.

11. Click **Configure**.
The **Edit Data Map** page is displayed with the selected account configuration.
12. Update the default member values for **Scenario**, **Value**, **Time Periods**, and **Cell Text** as required and click **Done**.
13. Click **Save and Close**

Defining Account Configuration

You can edit the data map to set the properties for each selected account in the source. This defines the values that are used when pushing the data between models.

To define account configuration:

1. On the **Data Maps** page, click **Configure**.
The **Edit Data Map** page displays the selected account configuration. On this page you can update **Basic Information**, **Options**, **Selection**, and **Account Configuration**.
2. For **Account Configuration**, click **Scenario** and make your selections for the selected account.

 **Note:**

- These selections are used in the data push for the selected account.
- For scenario rollups you will see the **Business Case** column in place of the **Scenario** column. The **Business Case** column displays the default option **Any** and this option is not editable. This is because the account configuration for the data movement is applicable for all the business cases in the current scenario rollup. The exact business cases for which the data movement happens will be determined at runtime based on your business case selection.

3. Click **Value** and select a value for the selected account.

 **Note:**

The Value defines what data of the selected account to be pushed:

- **Input:** Data from Input Value is pushed for the selected account.
- **Output:** Data from Output Value is pushed for the selected account.
- **None:** No data is pushed for the selected account

4. Click **Time Periods** and select a value for the selected account.

 **Note:**

The value for Time Periods defines the data from which periods the data to be pushed for the selected account:

- **History:** History Period data is pushed for the selected account.
- **Forecast:** Forecast Period data is pushed for the selected account.

5. Click **Cell Text** and select a value for the selected account.







 **Note:**

The value for Cell Text defines the cell text from which cell text to be pushed for the selected account:

- **Scenario:** The cell text for the Scenario cell is pushed for the selected account.
- **Time Series:** The cell text for the time period cells is pushed for the selected account.
- **None:** No cell text is pushed for the given account.


6. Click **Done**.

You can do the following actions in the **Account Configuration**:

- Click **Add Accounts**

, this lists the Accounts page. Select the required accounts and click **Select** to add accounts.
- Click **Delete Row**

: Select the row to be deleted and click the Delete Row button.
- Click **Copy Row(s)**

: Select the row to be copied and click the Copy Row button.
- Click **Paste Row(s)**

: Click on the grid and click the Paste Row button.
- Click **Delete Invalid Entry**

: Click to delete invalid entry.
- Click **Find**

: Click and enter the word for search.

Running a Data Map

You run the Data Map after creating and defining the account configuration.

1. From the Home page, click **Application**, then **Data Exchange**, and then click **Data Maps**.
2. From the **Actions**  menu for the data map you want to run, select **Clear and Push Data**.

To check the status of the data map and Smart Push job, from the Home page, click **Application**, and then click **Jobs**.

Click the job name to see information and status about the Smart Push job. If there is an error, click **Error** to see details to help you resolve the error. For more information about data maps and Smart Push jobs, see *Checking Real Time Progress Status for Data Maps and Smart Push* in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Associating Model to Model Data Maps to Source Model

When you associate model to model data maps to the source model, and when the model is checked in, the target models are automatically updated.

To associate model to model data maps to a source model:

1. From the Home page, click **Strategic Modeling**, and then click **Models**.
2. From the **Actions** menu next to the source model, click **Properties**.
3. Click the **Data Maps** tab.

4. From the **Available Data Maps** list, select the data map that you want to associate with the model.
5. Click the data map, and then click



The selected data map is displayed on the **Associated Data Maps** list.

 **Note:**

You can also drag and drop the data map to the **Associated Data Maps** list.

6. Select an option for **Run On** to indicate when the data map should run:
 - **Run on Check-In**—Run the data map when the model is checked in.
 - **Data Map Import or Check In**—Run the data map when another data map runs that imports data to the model. (Importing the data implicitly checks in the model.) You can automatically run up to three levels of associated data maps with this option.
7. Click **Apply**.

Using Microsoft Excel to Define Model to Model Data Maps

You can use Microsoft Excel to define the Model to Model Data Maps.

1. Define the basic dimension mappings in the **Data Maps** page.
2. From the **Actions** menu, select **Export Data Map**.
3. Open the Exported Excel sheet containing **Accounts**, **Source** and **Target Models**.
 - a. In the **Selection** sheet, update the Accounts and target models if needed.
 - b. In the **Account Configuration**, update the accounts you modified in the selection sheet.
4. In the **Data Maps** page, from the **Actions** menu, select **Import Data Map**, and then save the data map.

Pushing Data from a Strategic Modeling Scenario Rollup to a Strategic Modeling Scenario Rollup

You can push data from a Strategic Modeling scenario rollup to a Strategic Modeling scenario rollup using data maps. You can define scenario rollup to scenario rollup data maps that push the data between the models of a scenario rollup for given business cases.

Administrators must have privileges to create, edit, and run data maps.

To create scenario rollup to scenario rollup data maps:

1. From the Home page, click **Application**, then **Data Exchange**, and then click **Data Maps**.
2. Click **Create**.
3. Enter a name and description for the data map.

4. Under **Source**, select the source for the data: **Select Scenario Rollup**.
The **Select Scenario Rollup** page is displayed.
5. Select a scenario rollup and click **Select**.
If you don't see your Strategic Modeling scenario rollup in the list, from the **Actions** menu, select **Synchronize**.
6. Under **Target**, select the scenario rollup.
7. Click **Select** under the Source and Target sections of the dimension mapping row for Model.
The **Select Members** page is displayed.
8. Select the models for Source and Target and click **OK**.

 **Note:**

The target can be multiple models. You can push the data from one source model to multiple target models.

If you don't see your Strategic Modeling model in the list, from the **Actions** menu, select **Synchronize**.

9. Click **Select** in the Source section of the dimension mapping row for **Account**.
The **Select Members** page is displayed.
10. Select the accounts and click **OK**.

 **Note:**

Notice that selected Account Members are displayed in both Source and Target columns.

11. Click **Configure**. See [Defining Account Configuration](#).
The **Edit Data Map** page is displayed with the selected account configuration.
12. Update the default member values for **Value**, **Time Periods**, and **Cell Text** as required, and then click **Done**.

 **Note:**

Business Case displays **Any** and cannot be edited.

13. Click **Save and Close**.

When running scenario rollup to scenario rollup type data maps, data movement happens with respect to business cases and contributing scenarios. The business case information is dynamic and is retrieved at runtime based on the business cases selected in the **Run** dialog, and data movement occurs based on the selected business case/contributing scenario between the source and target models for account/custom dimension selection defined in the data maps.

 **Note:**

The **Clear and Push Data** option is not available for scenario rollup to scenario rollup type data maps. Scenario rollup to scenario rollup type data maps are only run from within the scenario rollup.

Using Microsoft Excel to Define Scenario Rollup to Scenario Rollup Data Maps

You can use Microsoft Excel to define the scenario rollup to scenario rollup data maps.

1. Define the mappings on the **Data Maps** page.
2. From the **Actions** menu, select **Export Data Map**.
3. Open the exported Excel sheet and update it as needed:
 - a. In the **Selection** sheet, update the **Source Model**, **Target Model**, and **Account** columns.
 - b. In the **Account Configuration** sheet, update the accounts you modified in the **Selection** sheet.

 **Note:**

For scenario rollup to scenario rollup data maps, instead of a **Scenario** column, there is a column for **Business Case**. The only value allowed in the **Business Case** column is **Any**. All values other than **Any** that are present in the **Business Case** column will default to **Any** when the Excel sheet is imported into the application.

4. In the **Data Maps** page, from the **Actions** menu, select **Import Data Map**, and then save the data map.

Managing Metadata with Model Change Management

Use Model Change Management to copy metadata from a source model to one or more target models.

Organizations work with different models to perform their strategic planning. Some models might be more granular, and others might focus on a specific territory or region. Typically, many of the models have a similar structure. For example, custom dimensions, accounts, scenarios, and time periods might differ only slightly. You can create a master source model in which you build the master structure of accounts, account groups, custom dimensions, time structure, and scenarios. You manage metadata by copying all or part of the metadata from this source model to one or more target models. You can also copy incremental changes from the source model to the target models.





To use model change management, first create a base model to use as the source. The source model should include the accounts, account groups, custom dimensions, time structure, and scenarios that you want to copy to any target models. After a source model is created, you can use Model Change Management to copy any of the metadata to one or more target models.

Overview of steps in Model Change Management:

1. Create the Model Change Management definition by selecting one or more target models. See [Defining Target Models for Model Change Management](#).
2. Define the metadata to copy:
 - Accounts and account attributes
 - Account groups
 - Custom dimensions
 - Time
 - Scenarios

See [Defining Metadata to Copy with Model Change Management](#).
3. Run Model Change Management to copy the metadata from the source model to target model or models. See [Copying Metadata from Source to Target](#).
4. If needed, you can edit or delete a Model Change Management definition. See [Editing or Deleting a Model Change Management Definition](#).

Videos

Your Goal	Watch This Video
Learn about copying subaccounts and account attributes with Model Change Management.	 Copying Subaccounts and Account Attributes with Model Change Management in Enterprise Planning Cloud.
Learn about copying account groups with Model Change Management.	 Copying Account Groups with Model Change Management in Enterprise Planning Cloud.
Learn about copying scenarios with Model Change Management.	 Copying Scenarios with Model Change Management in Enterprise Planning Cloud.
Learn about copying time periods with Model Change Management.	 Copying Time Periods with Model Change Management in Enterprise Planning Cloud.





Tip:


When copying accounts, account groups, scenarios, and reports, Strategic Modeling attempts to match the order of items in the target model as closely as possible to the order in the source model.

Defining Target Models for Model Change Management

To manage metadata with Model Change Management, first define the target models to copy metadata to.



1. From the Home page, click **Strategic Modeling**, and then click **Models**.

2. From the **Actions** ... menu for the model you want to use as a source, click **Model Change Management**, then click **Open**, and then click **Edit**.
3. On the **Map Target Model** tab , click **Add Target** , select the target model or models you want to copy metadata to, and then click **OK**.
The list includes all the models in the application.
Click **Exclude** to prevent a target model from being included when Model Change Management runs; metadata is not copied to this model.
4. Define the metadata to copy, and then click **Save**.
See [Defining Metadata to Copy with Model Change Management](#).

To delete a target model, select it and then click **Remove Target**  .

Defining Metadata to Copy with Model Change Management

To manage metadata with Model Change Management, after defining the target models, define the metadata to copy.

1. On the Model Change Management page, click **Configure Model**  to specify the metadata to copy.
2. Define the subaccounts to copy: On the **Accounts** tab, click **Add**  and then click **Add Subaccount Change**. The list displays all the accounts that have subaccounts. Select the accounts that have the subaccounts that you want to copy to the target models, and then select from additional options for copying subaccounts:
 - Keep account details in the target—Keeps account hierarchy details in the target even if they do not exist in the source.
 - Copy account attributes—Copies the attributes of the selected account to the target.
For all accounts, copies:
 - Account Name
 - Forecast Method
 - Subtotal Method
 - Account Note
 - Exchange Rate
 For Memo accounts, copies:
 - Account Name
 - Calculation Method
 - Aggregation Method
 - Output Type
 - Output Unit
 - Delete accounts not in the source—Deletes any accounts in the target that are not in the source. Oracle recommends that you select this option. Clearing this selection can cause errors during scenario rollup.

All of the subaccounts from the selected accounts are copied to the target.

3. Define the account attributes to copy: On the **Accounts** tab, click **Add +** and then click **Add Account Attribute Change**. Select the accounts that have the attributes that you want to copy to the target models, select the scenarios to copy for the selected accounts, and then select from additional options for copying account attributes:

 **Note:**

Account names are not translated to other languages, as they are user-editable fields.

- Rename Accounts—Renames accounts in the target to match those in the source.
- Copy Other Account Attributes—When you select this option, these account attributes are copied from the source to the target:
 - For all accounts, copies:
 - * Forecast Method
 - * Subtotal Method
 - * Account Note
 - * Exchange Rate
 - For Memo accounts, copies:
 - * Calculation Method
 - * Aggregation Method
 - * Output Type
 - * Output Unit

 **Tip:**

To edit the selections for accounts, click the link in the **Change Details** column on the **Accounts** tab.

4. Define the account groups to copy: On the **Account Groups** tab, click **Add Account Group +**. Select the account groups you want to copy to the target models, and then select from the following options:
 - Do not overwrite account group in the target—Does not overwrite the account group if it already exists in the target.
 - Overwrite account group in the target—Overwrites the account group if it already exists in the target.
 - Delete account group in the target—Deletes any account groups in the target that are not in the source.

 **Tip:**

Use **Search Account Groups** to easily find the account groups to copy.

5. Define how to handle custom dimensions when copying to the target: On the **Custom Dimensions** tab, click **Copy Custom Dimensions** to copy the custom dimensions to the target, and then select from the following options:
 - Assign accounts to custom dimensions in the target—Copies the account assignments along with the custom dimension structure to the target. For example, if the Sales account in the source is associated with a custom dimension, when the custom dimension structure is copied to the target, selecting this option assigns the custom dimension to the Sales account in the target.
 - Keep subhierarchies in custom dimensions in the target—When a custom dimension is in the target and in the source, allows you to keep child dimension members that are in the custom dimension in the target that are not in the source.
 - Delete custom dimensions not in the source—Deletes custom dimensions in the target that are not in the source. Oracle recommends that you select this option. Clearing this selection can cause errors during scenario rollup.

 **Tip:**


Click **Preview Source Custom Dimensions** to review the custom dimensions in the source model before making your selections.

6. Define how to handle time periods when copying to the target: On the **Time** tab, click **Copy Time Structure** to copy the time structure to the target, and then select one or more of the following options for retaining time structure details in the target:
 - Allow the target to keep time period details—Allows the target to retain time detail that is not in the source. For example if the source contains only years but the target also contains quarters, selecting this option retains the quarters in the target when you copy the time structure.
 - Allow the target to keep years earlier than years defined in the source—For example if the source model's time structure includes 2018 - 2022, and the target model includes 2015 - 2020, selecting this option results in the target model time structure to include 2015 - 2022.
 - Allow the target to keep years later than years defined in the source—For example if the source model's time structure includes 2017 - 2022, and the target model includes 2018 - 2025, selecting this option results in the target model time structure to include 2017 - 2025.

If you leave these options cleared, the time structure of the source completely replaces the time structure of the target.

 **Tip:**

Click **Preview Source Time Periods** to review the time periods in the source model before making your selections.

7. Define how to handle scenarios when copying to the target: On the **Scenarios** tab, click **Add Scenario Change** , select the scenarios to copy to the target, select from the following options, and then click **Add**:
 - Do not overwrite scenario in the target—Keeps any scenarios already in the target, even if they are not in the source.
 - Overwrite scenario in the target—Overwrites scenarios in the target.

- Delete scenario in the target—Deletes scenarios in the target that aren't in the source.

If needed, after you've defined the scenarios to copy, you can change the options on the **Scenarios** tab: Click **Change Details** next to the scenario, and select a new option.

8. Define how to handle reports when copying to the target: On the Reports tab click **Add Report Change**



, select the reports to copy to the target, select from the following options, and then click the confirm icon



:

- Do not overwrite if the Report exists in the target - If the report already exists in the target, it is left alone.
- Overwrite if the Report exists in the target - Overwrites existing reports in the target models.
- Remove the Report - Removes the report from target models if it exists.

If needed, after you've defined the scenarios to copy, you can change the options on the **Reports** tab: Click **Change Details** next to the report, and select a new option.

9. Click **Save and Close**.

Copying Metadata from Source to Target

To manage metadata with Model Change Management, after defining the target models and the metadata to copy, copy the metadata from source to target.

1. From the Home page, click **Strategic Modeling**, and then click **Models**.
2. From the **Actions** ... menu for the source model, click **Model Change Management**, then click **Open**, and then click **Run**.
Model Change Management locks the targets briefly to write the new metadata. If a target is locked by another user, the target is skipped and noted in the log.
3. Check the status of the model change management job: From the Home page, click **Application**, and then click **Jobs**. Click the job name to see information and status about the job. If there is an error, click **Error** to see details to help you resolve the error.
You can also check the job status on the Model Change Management page: From the **Actions** ... menu for the source model, click **Model Change Management** and then click **Status**. You see the status for each target model and the overall status for the source model.
4. Review your changes in the target model or models.

Editing or Deleting a Model Change Management Definition

If needed, you can edit or delete a Model Change Management definition.

1. From the Home page, click **Strategic Modeling**, and then click **Models**.
2. • To edit a model change management definition: From the **Actions** ... menu for the source model, click **Model Change Management**, then click **Open**, and then click **Edit**.

- To delete a model change management definition: From the **Actions** ... menu for the source model, click **Model Change Management** and then click **Delete**.

If the model is locked by another user, you can view the Model Change Management definition but you can't make changes to it.

8

Using the Member Selector

Use the member selector to select members and use wildcards in searches. You can also select substitution variables, user variables, and user-defined attributes (UDAs).

Related Topics

- [Working with Members](#)
- [Making Selections](#)
- [Member Relationships](#)
- [Using Wildcards in Searches](#)
- [Selecting Attribute Values as Members](#)
- [Selecting Members for Forms](#)
- [Selecting Substitution Variables as Members](#)
- [Selecting User Variables as Members](#)
- [Selecting UDAs as Members](#)

Working with Members

Use the **Select Members** dialog box to select the members to use with the following features:

- Business rule runtime prompts
- User variables
- Dynamic variables
- Data export
- Point of view and page axis where valid intersection rules are applied
- Valid intersections



Note:

Forms 2.0, Dashboards 2.0, and ad hoc grids use a different version of the member selector. See *Using the Member Selector in Administering and Working with Enterprise Profitability and Cost Management*.

If variables and attributes are defined, you can select variables and attributes. You can display and select members by member name or alias. The display options that you define for the **Member Selection** dialog box override those defined as an application default by a Service Administrator, and those specified as an application preference.

If drop-down member selectors are defined for row dimensions on a form, you can select members directly from the list, enter data, and add rows to a form.


See *Entering Data for Suppressed or Excluded Members in Working with Planning*.

Making Selections

Only members, substitution variables, and attributes to which you have access are displayed. The **Selections** pane only displays if you invoke the member selector for multiple member selection.



If valid intersection rules are used, only valid members are displayed in application forms and in runtime prompts for Calculation Manager rules. In ad hoc forms, both on the Web and in Oracle Smart View for Office, the application doesn't filter by valid intersections rules in point of view and page axis. Only cells in grids honor valid intersection rules in ad hoc forms.

To make selections:

1. Click .
2. **Optional:** Perform these tasks:
 - To enter search criteria (member name or alias only), press **Enter** (from the desktop) or click **Search** (on mobile).

 **Note:**

The search isn't case-sensitive. You can search for a word, multiple words, or wildcard characters. See [Using Wildcards in Searches](#).


- To change display options such as viewing variables and attributes, showing alias names, showing member counts, sorting alphabetically, refreshing the member list, or clearing selections, click  next to **Search**, and then select from the list of display options.
- To filter the members that are displayed in the member list, under  next to **Search**, select **Add Filter**, and then select from the list of filter options.

 **Note:**


Android users can click  to view and select filter options.

3. Make selections by clicking a member in the member list.
To understand how related members are selected, see [Member Relationships](#).


 **Note:**








- Selected members display a check mark and are moved to the **Selections** pane, if applicable.
- To expand a parent member to see its child members, click the expansion icon to the right of the parent member name. Clicking the expansion icon will not select the parent member.
- To clear selections you have made, click  and then select **Clear Selection**.


At times, you may find that a point of view and page axis member you want to select is suppressed. This occurs because a dimension selection in the point of view and page axis has invalidated other dimensions due to valid intersections that were applied. To resolve this issue, use the **Clear Selection** option to clear the point of view and page axis members you previously selected. Then you can use the point of view and page axis again to select members that were previously suppressed.

- To show all the members that are suppressed due to valid intersection rules, click  and then select **Show Invalid Members**. Invalid members are displayed but are unavailable for selection.



4. Optional: Perform these tasks:

- To further refine which related members are selected in the **Selections** pane, click  to the right of the member to display the member relationships menu:


Member	
Ancestors	
Children	
Descendants	
Siblings	
Parents	
Level 0 Descendants	
Left Siblings	
Right Siblings	
Previous Sibling	
Next Sibling	
Previous Level 0 Member	
Next Level 0 Member	
Previous Generation Me...	
Next Generation Member	

Click the relationship name to select the related members, excluding the selected member. Click the include icon  to the right of the relationship name to select the related members, including the selected member.

For descriptions of the relationships, see [Member Relationships](#).

- If substitution variables or attributes are defined, below the member selection area, click  next to **Members**, and then select **Substitution Variables** or **Attributes** to select members for substitution variables or attributes. Members are displayed as children. Only members to which the user has read access are displayed in forms.
- To move or remove members in the **Selections** pane, click  next to **Selections**.
- To highlight the location of a selected member within the dimension hierarchy, double-click the member name in the **Selections** pane.

 **Note:**

To highlight the location of a selected member on a mobile device, tap the member name in the **Selections** pane, and then tap **Locate** under  next to **Selections**.

5. When you're done making selections, click **OK**.

Member Relationships

This table describes which members and related members are included during member selection.

Table 8-1 Member Relationships

Relationship	Members Included
Member	The selected member
Ancestors	All members above the selected member, excluding the selected member
Ancestors (inc)	The selected member and its ancestors
Children	All members in the level immediately below the selected member
Children (inc)	The selected member and its children
Descendants	All descendants of the selected member, excluding the selected member
Descendants (inc)	The selected member and its descendants
Siblings	All members from the same level in the hierarchy as the selected member, excluding the selected member
Siblings (inc)	The selected member and its siblings
Parents	The member in the level above the selected member
Parents (inc)	The selected member and its parent
Level 0 Descendants	All descendants of the selected member that have no children

Table 8-1 (Cont.) Member Relationships

Relationship	Members Included
Left Siblings	The members that appear before the selected member with the same parent
Left Siblings (inc)	The selected member and its left siblings
Right Siblings	The members that appear after the selected member with the same parent
Right Siblings (inc)	The selected member and its right siblings
Previous Sibling	The member that appears immediately before the selected member with the same parent
Next Sibling	The member that appears immediately after the selected member with the same parent
Previous Level 0 Member	The previous level zero member that appears before the selected member Examples: <code>PrevLv10Mbr(Jan)</code> returns <code>BegBalance</code> ; <code>PrevLv10Mbr(Jul)</code> returns <code>Jun</code> ; <code>PrevLv10Mbr(BegBalance)</code> returns an empty result
Next Level 0 Member	The next level zero member that appears after the selected member Examples: <code>NextLv10Mbr(Mar)</code> returns <code>Apr</code> ; <code>NextLv10Mbr(Dec)</code> returns an empty result
Previous Generation Member	The member that appears immediately before the selected member within the same generation
Next Generation Member	The member that appears immediately after the selected member within the same generation
Relative	Returns a member relative to the specified member at the same generation with the specified offset. Examples: <code>Relative("Jan", 4)</code> returns <code>May</code> , which is January plus 4 months in a standard monthly Period dimension; <code>Relative("Jan", -2)</code> returns <code>Nov</code> , which is January minus 2 months in a standard monthly Period dimension.
Relative Range	Returns all of the members from the starting member to the offset member when going forward or from the offset member to the starting member when going backwards. Examples: <code>RelativeRange("Jan", 4)</code> returns <code>Jan, Feb, Mar, Apr, May</code> ; <code>RelativeRange("Jan", -2)</code> returns <code>Nov, Dec, Jan</code> .

 **Note:**

Member relationships work for any dimension, not just the Period dimension. We've used the Period dimension in our examples because it's easier to explain as time is linear.

Using Wildcards in Searches

You can use these wildcard characters to search for members.

Table 8-2 Wildcard Characters

Wildcard	Description
?	Match any single character
*	Match zero or multiple characters. For example, enter "sale*" to find "Sales" and "Sale" because * includes zero or more characters after the word "sale." The default search uses the * wildcard. For example, entering "cash" searches for "*cash*" and returns "Restricted Cash", "Cash Equivalents", "Cash", and "Noncash Expenses" because the word "cash" appears within each matched item.
#	Match any single number (0-9)
[list]	Match any single character within a specified list of characters. You can list specific characters to use as wildcard. For example, enter [plan] to use all the letters within the brackets as a single wildcard character. You can use the "-" character to specify a range, such as [A-Z] or [!0-9]. To use the "-" character as part of the list, enter it at the beginning of the list. For example, [-@&] uses the characters within the brackets as wildcard characters.
[!list]	Match any single character not found within a specified list of characters. The "-" character can also be used to indicate a range, such as ![A-Z] or ![0-9].

Selecting Attribute Values as Members

If attribute members are defined, you can select attribute values on the **Select Members** dialog box. For attribute members, selecting a non-level 0 attribute selects all level 0 descendants and applies the operator to each. For attributes of type numeric, date, and Boolean (where false = 0 and true = 1), evaluation is based on the minimum and maximum values. For text attributes, evaluation is based on the position from top to bottom in the hierarchy. The top position has the lowest value, and the bottom position has the highest value.

Example: Numeric attribute

In this example, the selected operator is applied to each level 0 descendant, based on the numeric value. For example, selecting NotEqual and Small in the Member Selection dialog box includes all values not equal to 1 and not equal to 2, so the selection includes 3, 4, 5, and 6. Selecting Greater and Small includes all values greater than 1 or greater than 2, so the selection includes 2, 3, 4, 5, and 6.

```
Size
Small
1
2
Medium
3
4
Large
5
```

Table 8-3 Example: Numeric Attribute Evaluation

Selected Operator	Selected Attribute Value	Result	Explanation
Equal	Large	5, 6	The Equal operator is applied to all level 0 descendants of Large, which includes 5 and 6.
Less	Medium	1, 2, 3	The Less operator is applied to all level 0 descendants of Medium. This includes values < 3 OR < 4, which results in 1, 2, and 3.
Greater	Medium	4, 5, 6	The Greater operator is applied to all level 0 descendants of Medium. This includes values > 3 OR > 4, which results in 4, 5, and 6.
GreaterOrEqual	Medium	3, 4, 5, 6	The GreaterOrEqual operator is applied to all level 0 descendants of Medium. This includes values >=3 OR >= 4, which results in 3, 4, 5, and 6.
LessOrEqual	Medium	1, 2, 3, 4	The LessOrEqual operator is applied to all level 0 descendants of Medium. This includes values <=3 OR <=4, which results in 1, 2, 3, and 4.
NotEqual	Medium	1, 2, 5, 6	The NotEqual operator is applied to all level 0 descendants of Medium. This includes values not equal to 3 AND not equal to 4, which results in 1, 2, 5, and 6.

Example: Text attribute

For text attributes, the selected operator is applied to each level 0 descendant based on its position in the hierarchy, from top (lowest value) to bottom (highest value).

In this example, Envelope is at the top position and has the lowest value. Packet has the next higher value, followed by Box, Carton, Barrel and Crate. Crate is at the bottom position and has the highest value.

For this text attribute, selecting Less and Small includes values that are less than Envelope or less than Packet. Because Envelope is less than Packet, the resulting selection includes only Envelope. Likewise, selecting Greater and Large includes values that are greater than Barrel or greater than Crate, so the resulting selection includes only Crate.

Containers

Small

Envelope

Packet

Medium

Box

Carton

Large

Barrel

Crate

Table 8-4 Example: Text Attribute Evaluation

Selected Operator	Selected Attribute Value	Result	Explanation
Equal	Medium	Box, Carton	The Equal operator is applied to all level 0 descendants of Medium, which includes Box and Carton.
NotEqual	Medium	Envelope, Packet, Barrel, Crate	The NotEqual operator is applied to all level 0 descendants of Medium. This includes values not equal to Box AND not equal to Carton, which results in Envelope, Packet, Barrel, and Crate.
Less	Medium	Box, Packet, Envelope	The Less operator is applied to all level 0 descendants of Medium. This includes everything at a lower position than Carton OR a lower position than Box, which results in Box, Packet, and Envelope.
LessOrEqual	Medium	Envelope, Packet, Box, Carton	The LessOrEqual operator is applied to all level 0 descendants of Medium. This includes everything at the same position as Carton OR at a lower position than Carton, which results in Envelope, Packet, Box, and Carton.

Selecting Members for Forms

When selecting members for forms:

- To filter members from certain users, restrict their access permissions to members, and then refresh the plan.
- The order of members in the **Selected Members** list determines the order on forms. To change the order, select a member and click the Up or Down Arrow above the selected members list.

Note:

If you select members individually and select their parent first, the parent displays in the form at the top of its member hierarchy. (Note that depending on the number of hierarchy levels, calculating totals for the parent of individually selected members could take several passes, slowing calculations). The parent of members selected by relationship, for example, by I(Descendants), displays at the bottom of the hierarchy.

- In the **Layout** tab of the **Form Management** dialog box, you can open the **Member Selection** dialog box by clicking the member selection icon, or by right-clicking a row or column and selecting **Select Members**.
- To select different sets of members across the same dimension, see [Creating Asymmetric Rows and Columns](#).
- For forms with multiple dimensions in a row or column, you can set member selection options for a dimension by selecting that dimension from the **Dimensions** drop-down list that is displayed in the Member Selection dialog box for multiple dimensions in a row or column.

- If you click the member selection icon, an option is displayed for **Place Selection in Separate Rows** or **Place Selection in Separate Columns**. This adds the selection to the rows or columns after the last existing row or column on the form. For example, for a form that contains members Acct1, Acct2, and Acct3 in Column A, if you select these members with **Place Selection in Separate Columns** selected, Acct1 is selected for column A, Acct2 for column B, and Acct3 for column C. If you select the members without this option, all of the members are selected for column A.

This feature is available for single members only, not for members selected with functions, such as Children (inc). For example, if you select Q/IChildren for Column A and select **Place Selection in Separate Columns**, the form layout isn't changed.

- All settings except Count are retained after the Member Selection dialog box is closed, and members in the Member Selection dialog box are displayed based on user-defined settings. Members displayed on the Layout tab don't inherit the display settings defined in Member Selection dialog box. Instead, they are displayed using the member name.
- To define different sets of members for a dimension, see [Creating Asymmetric Rows and Columns](#).
- To set display, functionality, and printing options, see [Setting Form Precision and Other Options](#).

Selecting Substitution Variables as Members

Substitution variables act as global placeholders for information that changes regularly. Substitution variables are especially useful for developing and reporting on rolling forecasts. When you select substitution variables as members on the form, their values are based on dynamically generated information. For example, you could set the current month member to the substitution variable `CurMnth` so that when the month changes, you need not update the month value manually in the form or the report script.

 **Note:**

- When you open or calculate values on forms, the application replaces substitution variables with values assigned to them.
- You create and assign values to substitution variables within the application. These substitution variables are then available in the application when you select members for a form. For instructions on creating and assigning values to substitution variables using the application, see [Working with Substitution Variables](#).
- Substitution variables must be appropriate for the context in forms. For example, you could select a substitution variable named `CurrQtr` with a value of Qtr2 as a member of the Time Period dimension. It's not valid to select a substitution variable named `CurrYr` for the Years dimension if its value is Feb. You can set substitution variables at the application or database level.

The same substitution variable can exist on multiple levels; the application uses the first one it finds as it searches in this order:

1. Database
 2. Application
- You can select from substitution variables if they are enabled for runtime prompts in business rules, and their values match a member set in the runtime prompt for a business rule.
 - The application checks the validity of substitution variables when they are used (for example, when the form is opened). It doesn't check when you design forms, so you should test substitution variables by saving and opening forms.
 - If you migrated an application that uses Global variables, you can view, but not edit, them in this business process.

To specify substitution variables in forms:

1. Create the form (see [Creating Forms](#)).
2. In **Member Selection**, click the **Variables** tab, expand **Substitution Variables**, and then select substitution variables the same way you select members, to move substitution variables to and from **Selected Members**.

When selected, a substitution variable is preceded by an ampersand (&). For example:

```
&CurrentScenario
```

3. Click **OK**.

Selecting User Variables as Members

User variables act as filters in forms, enabling users to focus only on certain members, such as a department. Before you can associate a user variable with a form, you must create the user variable. See [Managing User Variables](#).

When you create forms with user variables, users must select values for the variable before opening forms. For example, if you create a user variable called `Division`, users must select a division before working in the form. The first time you select a variable for a form, you do it in preferences. Afterward, you can update the variable in preferences or in the form.

To select user variables for forms:

1. Create the form (see [Creating Forms](#)).
2. On **Member Selection**, click the **Variables** tab, expand **User Variables**, and then select user variables the same way you select members, using the arrows to move user variables to and from **Selected Members**.

User variables are displayed for the current dimension. For example, user variables for the Entity dimension might display as follows:

```
Division = [User Variable]
```

When selected, a user variable is preceded by an ampersand. For example:

```
Idescendants(&Division)
```

3. Click **OK**.

Selecting UDAs as Members

You can select members for forms based on a common attribute, which you have defined as a user-defined attribute (UDA). Before you can associate the UDA with a form, you must create the UDA. See [Working with UDAs](#).

When you create forms with UDAs, any members that are assigned to the UDA are dynamically added to the form. For example, if you create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy, the form will automatically display the new products at runtime.

To select UDAs for forms:

1. Create the form (see [Creating Forms](#)).
2. On **Member Selection**, click the **Variables** tab, expand the **UDAs**, and then select the UDAs the same way you select members, using the arrows to move UDAs to and from the **Selected Members**.

UDAs are displayed for the current dimension only. When selected, a UDA is preceded by UDA. For example:

```
UDA(New Products)
```

3. Click **OK**.

9

Connecting Environments in EPM Cloud

Learn how to connect environments so users who have access across EPM Cloud can use a single access point with one login. Understand use cases, scenarios, and considerations, and learn how to connect to external web services and use direct URLs to integrate environments.

Related Topics

- [About Connecting EPM Cloud Environments](#)
- [Considerations for Migrating EPM Cloud Connections](#)
- [Creating, Editing, and Deleting Connections to Other EPM Cloud Environments](#)
- [Connecting to External Web Services](#)
- [Specifying Advanced Options for External Connections](#)
- [Navigating Across EPM Cloud Environments](#)
- [Customizing Navigation Flows to Access Other EPM Cloud Environments](#)
- [Using Direct URLs to Integrate Connected Environments](#)

About Connecting EPM Cloud Environments

Overview

Service Administrators can connect multiple EPM Cloud environments of the following types:

- Account Reconciliation
- Enterprise Profitability and Cost Management
- Financial Consolidation and Close
- FreeForm
- Narrative Reporting
- Planning
- Planning Modules
- Profitability and Cost Management
- Sales Planning
- Strategic Workforce Planning
- Tax Reporting

Once Service Administrators set up the connections, users who have access across EPM Cloud environments can navigate across them from a single access point with one login. Also artifacts such as forms and dashboards, from across environments can be co-mingled within a cluster or within tabs on a card in navigation flows. Artifacts in the target environment are accessible based on the user's role.

 **Note:**

You can also connect directly Oracle Analytics Cloud Enterprise Edition or Professional Edition 5.6 to EPM Cloud Platform, provided you have both services. When you've configured the connection, you can visualize data from EPM Cloud business processes in Oracle Analytics Cloud. You no longer have to model EPM data in a metadata repository (RPD) file to create visualizations and dashboards in Oracle Analytics Cloud. For more information, see the Oracle Analytics Cloud documentation.

Additionally, you can connect Oracle NetSuite Account Reconciliation and Oracle NetSuite Planning and Budgeting.

Which environments can I connect?

The source environment is the environment from which you're creating the connection. The target environment is the environment to which you're connecting from the source environment.


You can connect these source environments (these environments can also be target environments):

- Enterprise Profitability and Cost Management
- FreeForm
- Financial Consolidation and Close
- Oracle NetSuite Planning and Budgeting
- Planning
- Planning Modules
- Sales Planning
- Strategic Workforce Planning
- Tax Reporting

Source environments can also connect to these target environments (these environments can't be source environments):

- Account Reconciliation
- Narrative Reporting
- Oracle NetSuite Account Reconciliation
- Profitability and Cost Management

What are the ways I can connect to other EPM Cloud environments?

- Toggle between the source environment and the target environment on the **Navigator**  menu. See [Navigating Across EPM Cloud Environments](#).
- Customize navigation flows in the source environment to access clusters, cards, and artifacts in other target environments from the Home page. See [Customizing Navigation Flows to Access Other EPM Cloud Environments](#).
- Use direct URLs to seamlessly integrate connected environments. See [Using Direct URLs to Integrate Connected Environments](#).

Considerations

- Only Service Administrators create cross-environment connections.
Users click a navigation link to open the linked environment. Access within the linked environment is determined by the predefined role and access permissions, if any, assigned to the user.
- For cross-environment navigation to be seamless, all environment instances to which cross-environment navigation flows are setup must belong to the same identity domain.

Note:





If the target and source environment instances are not on the same identity domain, then you'll not be able to establish a connection between them.

- Service Administrators cannot configure cross-environment connections using corporate SSO (identity provider) credentials.
If your environments are configured for SSO, ensure that identity domain credentials are maintained for the Service Administrators who configure cross-environment connections. See [Enabling Sign In With Identity Domain Credentials](#).
- Migrating cross-environment connections between test and production environments can cause issues in certain use case scenarios. For more information, see [Considerations for Migrating EPM Cloud Connections](#).
- Vanity URLs are not supported in cross-environment connections.

Troubleshooting

For help with information on fixing common errors while connecting environments, see *Handling Issues with Navigation Flows in Oracle Enterprise Performance Management Cloud Operations Guide*.

Videos

Your Goal	Watch This Video
Watch this video to learn how to customize an EPM Cloud workflow.	 Overview: Configure Navigation Flows to Integrate EPM Cloud Business Processes
Watch this video series to learn about connected planning. You'll see the overall connected planning solution and how planning solutions can be connected through cross pod smart push and navigation flows to provide a seamless experience for planners across different departments. In the first video, the focus is on Financials and Sales. The next video focuses on Strategic Workforce Planning and IT Planning. The last video focuses on Marketing Campaign Planning.	 Overview: Connected Planning - Aligning Sales Plans with Financial Targets
	 Overview: Connected Planning - Strategic Workforce and IT Planning
	 Overview: Connected Planning - Managing Marketing Campaigns

Considerations for Migrating EPM Cloud Connections

Oracle recognizes that it's common practice for Service Administrators to try out new features, such as connecting environments, on test environments and then migrate to production environments. However, in doing so, it could cause some issues after migration. Here are some use case scenarios that you need to be aware of.

In the following scenarios, assume you have environments for Financial Consolidation and Close and Planning.

Use Case Scenario 1: Test to Production

When migrating connections from test environments to production environments, ensure that connections that were defined in the test environment are changed to point to the corresponding production environments.

For example, a Service Administrator has defined a connection between the test environments of Planning and Financial Consolidation and Close. The Service Administrator then uses this connection to build a navigation flow in Planning that refers to a card in the Financial Consolidation and Close. The snapshot that the Service Administrator creates for migrating the Planning test environment will include connections and navigation flows, including the connection to Financial Consolidation and Close test environment.

On migrating the snapshot into the Planning production environment, Planning will have an undesirable connection to the Financial Consolidation and Close test environment. You must manually change undesirable connections to point to the corresponding production environment either before or after migrating the environment.

Use Case Scenario 2: Production to Production or Test to Test

This scenario doesn't have any caveats.

Use Case Scenario 3: Production to Test

In this scenario, the Service Administrator might be trying to migrate a snapshot from a production environment into a test environment to resolve an issue. Because the connections created in the test environment still points to a production environment, it is important for the Service Administrator to modify connections so that they point to a test environment. Connections in test environments that point to a production environment may inadvertently tamper with the production environment.

Creating, Editing, and Deleting Connections to Other EPM Cloud Environments

Before you can create connections to other EPM Cloud environments, you must ensure you have access to the source and target environments you're connecting. You must also have URLs for the other environments you're connecting and login details for each environment such as user ID (Service Administrator) and password.

To create, edit, duplicate, and delete connections:

1. Login to the source environment.
2. From the Home page, click **Tools**, and then click **Connections**.
3. Choose an action:

- To add a connection:
 - a. On the **Manage Connections** page, click **Create**.
 - b. On the **Select Provider to Create Connection** page, select the target environment you want to add.
 - c. Enter the target environment connection details:
 - Click **Change Provider** to select a different target environment.
 - In **Connection Name** enter name for this navigation link; for example, Consolidation Application.
 - Enter an optional description for the link.
 - In **URL**, enter the URL of the target environment instance; for example, `http(s)://your-target-host-url.com`. This is the URL that you normally use to sign in to the target environment instance.
 - Use **Service Administrator** and **Password** to specify the credentials of a Service Administrator.

 **Note:**

- * These credentials are used only to define and validate the navigation link. When a user logs in, their own role and access will be applied to access the target environment.
- * Do not prefix user names with the domain name for connections to other EPM Cloud environments. However, the domain name is still needed for connections to other external Web services. See [Connecting to External Web Services](#).



- The **Domain** field is automatically populated based on the URL you enter. If there is no domain in the URL, then the **Domain** field is left blank.
- d. Click **Validate**.
- e. If the validation is successful, click **Save and Close**.
- To edit connections:
 - a. On the **Manage Connections** page, click the name of a connection.
 - b. Edit connection details.

 **Note:**

If you edit the URL to connect to a new service type, you could cause navigation flows to break. If you want to connect to a different service, Oracle recommends creating a new connection instead.

- c. Click **Validate**.
- d. If the validation is successful, click **Save and Close**.
- To duplicate a connection:

- a. On the **Manage Connections** page, in the **Action** column next to the connection you want to duplicate, click **•••**.
- b. Click **Duplicate**.
- c. Enter a name for the duplicate connection, then click **OK**.
- To delete a connection:
 - a. On the **Manage Connections** page, in the **Action** column next to the connection you want to delete, click **•••**.
 - b. Click **Delete**.

When target environments are connected to an EPM Cloud source environment, they are listed in the **My Connections** pane on the **Navigator**  menu of the source environment. The **My Connections** pane on the **Navigator**  menu is where you can navigate across environments. See [Navigating Across EPM Cloud Environments](#).

Troubleshooting

For troubleshooting assistance, see [Handling Issues with Navigation Flows](#) in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Connecting to External Web Services

Service Administrators can also connect to external Web services for the purpose of reading data from and writing to an external Web service.

This connection can be referenced or used in a Groovy script to create a communications link between the Groovy script and the external HTTP/HTTPS resource. For more details and examples of how this connection can be used in a Groovy script, see the Java API documentation for the [Connection](#) and the [HttpRequest](#) objects in the EPM Groovy object model.

Note:

The **Other Web Service Provider** connection type is only available for use with those business processes that allow Groovy Rules to be created. See the [Oracle Enterprise Performance Management Cloud, Groovy Rules Java API Reference](#).

Before you can create connections to external Web services, you must ensure you have access to the Web service you're connecting. You must also have URLs for the Web service and any login details, if required.

To create a connection to an external Web service:

1. Login to the source environment.
2. From the Home page, click **Tools**, and then click **Connections**.
3. On the **Manage Connections** page, click **Create**.
4. Click **Other Web Service Provider**.
5. Enter a **Connection Name** and a **Description** for the connection.
6. Enter the **URL** for the target connection.

7. Enter optional advanced options for the URL.

 **Note:**

The optional advanced options enable you to specify query or header parameters when defining an external connection. See [Specifying Advanced Options for External Connections](#).

8. Enter **User** and **Password** login credentials for the connection, if required. In some cases, such as connecting to Oracle Fusion Cloud EPM services, the domain name may need to be prefixed to the user name; for example, <Identity Domain>.<User Name>.

To understand basic authentication for EPM Cloud REST APIs and for instructions on finding your identity domain, see Basic Authentication - for Classic and OCI in *REST API for Enterprise Performance Management Cloud*.

9. Click **Save and Close**.

Specifying Advanced Options for External Connections



The optional advanced options enable you to specify query or header parameters when defining an external connection.

 **Note:**

The ability to define query parameters for an external connection is only available for use with those business processes that allow Groovy Rules to be created. See the [Oracle Enterprise Performance Management Cloud, Groovy Rules Java API Reference](#).

To specify advanced options for external connections:


1. Create an external connection or open an existing external connection.
See [Connecting to External Web Services](#).
2. Enter connection details, and then click **Show Advanced Options**.
3. Specify query details as follows:

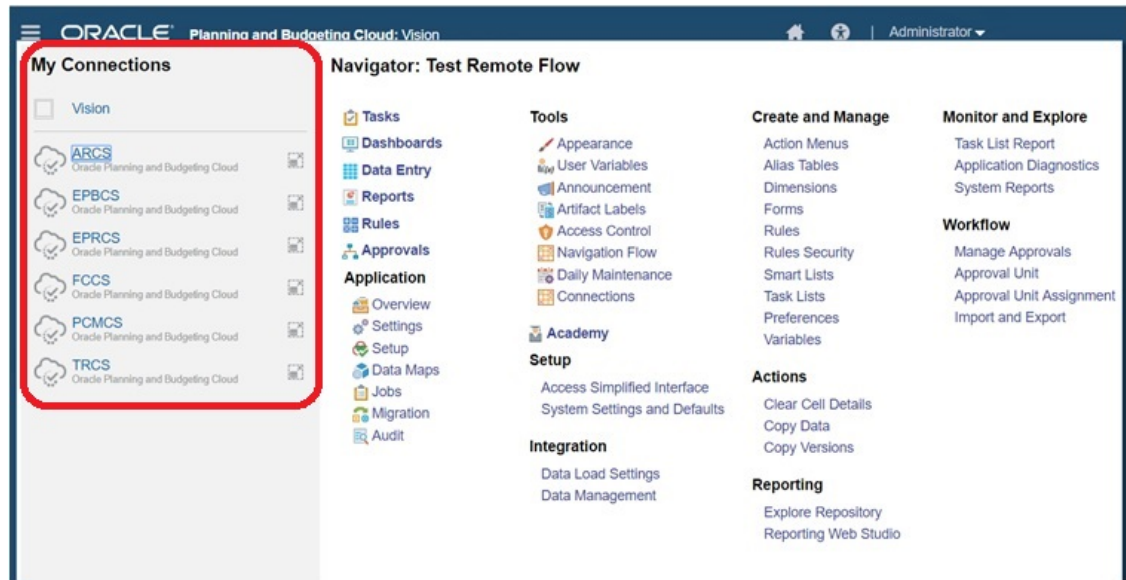
-  : Add query
-  : Delete query
- **Type:** Select **Header** or **Parameter**.
Header sets a default header that will be sent on every request made for this connection. **Parameter** sets a default query parameter that will be sent on every request made for this connection.
- **Secure:** If selected, the value entered in the **Value** field will be encrypted. Clearing the **Secure** check box for a row will remove the value.

An example header that one would secure is the Bearer Token for external Web services that supports Bearer Authentication, or the API Key query parameter for external Web services that supports API keys for authentication.

- **Name:** Enter a name for the header or query parameter.
- **Value:** Enter the value for the header or query parameter.


Navigating Across EPM Cloud Environments

Once a Service Administrator creates connections to other EPM Cloud environments, the connections are listed in the **My Connections** pane on the **Navigator**  menu.



You can toggle between the environments from this location. You must have access to the other environments in order to open them. Artifacts are accessible based on the user's role.

To open another Oracle Enterprise Performance Management Cloud environment:

1. From the Home page, click **Navigator** .
2. If environments are connected and you have access to those environments, you'll see a list of connected environments in the **My Connections** pane. Click an environment to open it.

 **Note:**

Click the icon to the right of the environment name to open the environment in a new window.

Customizing Navigation Flows to Access Other EPM Cloud Environments

You can customize the business process interface to access other EPM Cloud environments from the Home page of a source environment. For example, you can add artifacts to the Home page, such as forms or reports, from other EPM Cloud environments. You can group these artifacts (called cards) into clusters by customizing navigation flows. Clusters and cards from target EPM Cloud environments can be directly included in the navigation flows of source EPM Cloud environments. You can also use the Navigation Flow Designer to customize cards to have tabular pages where each tab is an artifact from a different environment.

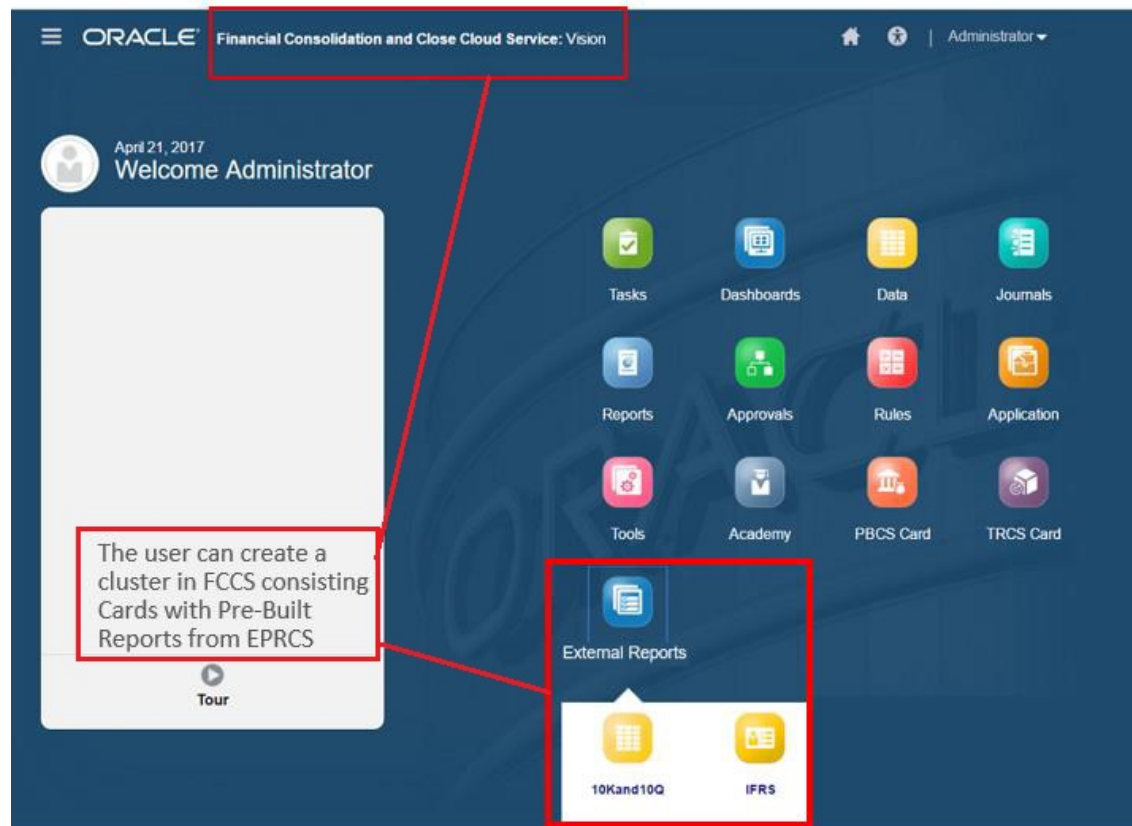
These two use cases describe in detail how to customize navigation flows to access other EPM Cloud environments:

- [Grouping Cards from Other EPM Cloud Environments into Clusters](#)
- [Configuring Cards with Tabs from Multiple EPM Cloud Environments](#)

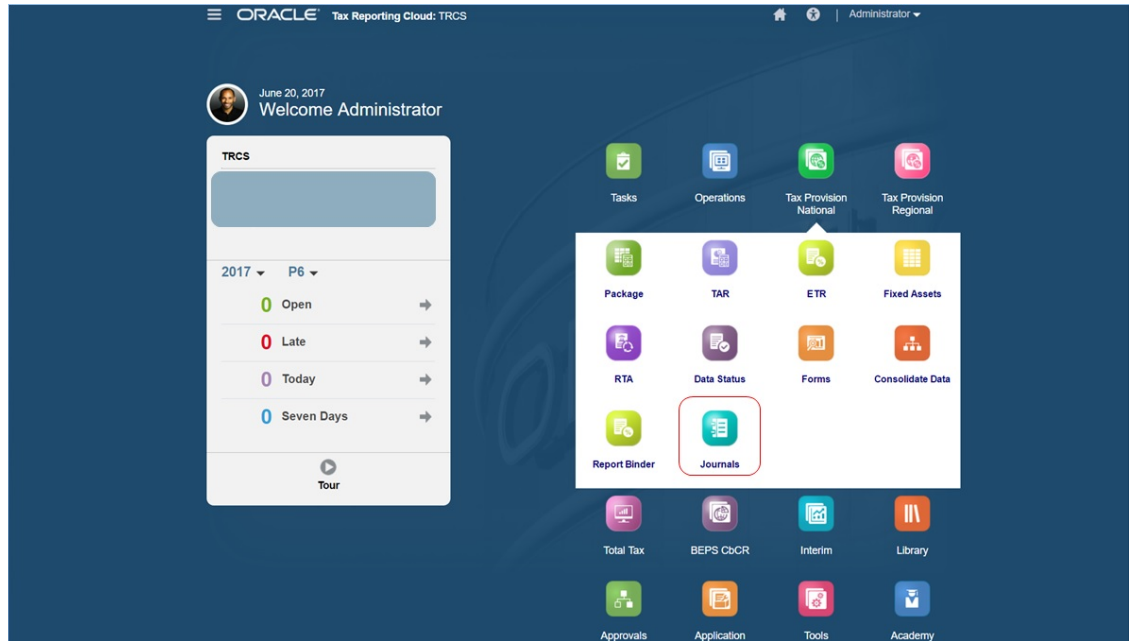
To learn more about designing navigation flows, see [Designing Custom Navigation Flows](#).

Grouping Cards from Other EPM Cloud Environments into Clusters

You can group cards from various EPM Cloud environments into a cluster that is accessible from the Home page of a source environment. For example, you can create a cluster within Financial Consolidation and Close consisting of cards with pre-built external reports from Narrative Reporting.



Cards from multiple environments can also be included within the same cluster on a source environment. For example, a Tax Reporting user can launch a Journals icon from Financial Consolidation and Close without leaving Tax Reporting.



You create clusters and add cards to clusters by customizing navigation flows.


For general information about navigation flows, see [Designing Custom Navigation Flows](#).

To create a cluster made up of cards from other EPM Cloud environments:

1. Launch the Navigation Flow page and create a navigation flow or edit an existing navigation flow:

 **Note:**

To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.

- a. Click **Tools**, and then click **Navigation Flows**.
- b. To create a navigation flow, select the navigation flow you want to duplicate, then in the upper right-hand corner of the page, click , and then select **Create Copy**. Enter a name for the navigation flow, and then click **OK**.


 **Note:**

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate or deactivate a navigation flow, in the **Active** column, click **Active** or **Inactive**. Only one navigation flow at a time can be active.

- c. To edit an existing navigation flow, click the name of the navigation flow you want to edit.

 **Note:**



Editing is only possible if the navigation flow is inactive. If the navigation flow you want to edit is active, ensure you mark it **Inactive** before editing.

2. Create a cluster or add an existing cluster:
 - a. If it isn't already open, from the **Navigation Flow** page, click the name of the navigation flow in which you want to add a cluster.
 - b. To create a new cluster, right-click a card or cluster (or click ) , click **Add Cluster**, enter or select the cluster details, and then choose an icon for the cluster.
 - c. If there is an existing cluster you want to add from another environment, right-click a card or cluster (or click **Add Existing Card/Cluster**), select the target environment under **My Connections**, and then choose the cluster you want to add to your navigation flow.

Note the following:

- Clusters can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Clusters that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the cluster labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.

See Specifying Artifact Labels.

3. Select the cards to include in the cluster using one of these options:
 - Navigate to the card you want to add to the cluster. If the card is within another environment, first select the environment under **My Connections**, and then navigate to the card in that environment. Assign the card to a cluster using one of these options:
 - To the right of the card that you want to move, in the **Order** column, click  . Select the cluster, and then click **OK**.
 - Click the name of the card to view the card details, then for **Cluster** select a cluster for the card, and then click **OK**.
 - Navigate to the cluster in which you want to add the new card. If the cluster is within another environment, first select the environment under **My Connections**, and then navigate to the cluster in that environment. Right-click the cluster (or click ) , click **Add Card In Cluster**, and then select an option:
 - Select **Add Existing Card**, to select an existing card or to add existing cards from another cluster to the selected cluster.
 - Select **Add Card**, and then enter card details to add a new card to the selected cluster.

 **Note:**

You cannot add a card to a cluster if the card or the cluster is already referenced from another navigation flow.

The cards will appear in the listing as children of the cluster. Use the up and down arrows next to the cards to reorder the cards within the cluster, if needed.

4. Click **Save and Close**.

You must activate the navigation flow and reload it to view your design time changes. To reload a navigation flow, click the down arrow next to your user name. Then on the **Setting and Actions** menu, click **Reload Navigation Flow**.

Settings and Actions

[Reload Navigation Flow](#)

[Downloads...](#)

[Help...](#)

[Cloud Customer Connect](#)

[Provide Feedback...](#)

[Oracle Support...](#)

[About...](#)

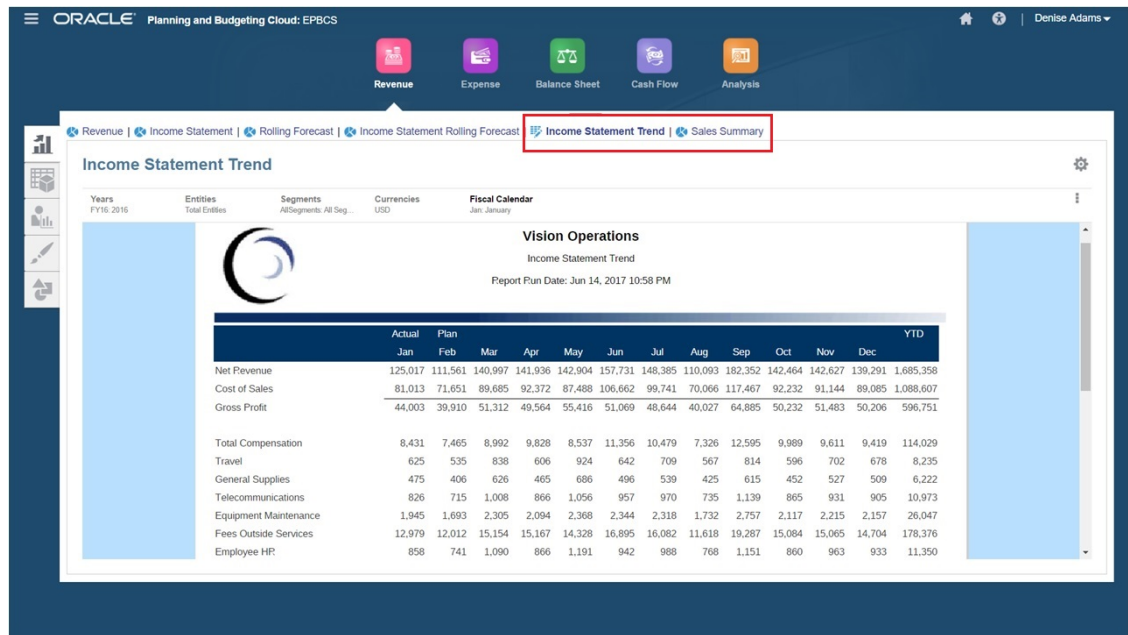
[Sign Out](#)

Troubleshooting

If you can't see your referenced artifacts after activating and reloading the navigation flow, see *Handling Issues with Navigation Flows* in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Configuring Cards with Tabs from Multiple EPM Cloud Environments

You can also customize cards in navigation flows to have tabular pages where each tab is an artifact from a different environment. For example, a Planning user can click a Revenue icon which launches a card with horizontal tabs showing reports from Narrative Reporting.



You create tabular cards by customizing navigation flows.


For general information about navigation flows, see [Designing Custom Navigation Flows](#).

To configure a card made up of tabs and sub tabs from other EPM Cloud environments:

1. Launch the **Navigation Flow** page and create a navigation flow or edit an existing navigation flow:

 **Note:**


To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.

- a. Click **Tools**, and then click **Navigation Flows**.
- b. To create a navigation flow, select the navigation flow you want to duplicate, then in the upper right-hand corner of the page, click , and then select **Create Copy**. Enter a name for the navigation flow, and then click **OK**.

 **Note:**

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate or deactivate a navigation flow, in the **Active** column, click **Active** or **Inactive**. Only one navigation flow at a time can be active.



- c. To edit an existing navigation flow, click the name of the navigation flow you want to edit.
2. Add a tabular card with artifacts from various target environments:

- a. If there is an existing card you want to add from another environment, from the **Navigation Flow** page, right-click a card or cluster (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the card you want to add to your navigation flow.

Note the following:

- Cards can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Cards that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the card labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.

See Specifying Artifact Labels.

- b. To add a new tabular card to the navigation flow, from the **Navigation Flow** page, right-click a card or cluster (or click ) , click **Add Card**, and then select details for the card:
 - **Name**: Enter a label for the card.
 - **Visible**: Select whether the card is visible to users on the Home page.
 - **Cluster**: If clusters exist, select a cluster for the card or select **None**.
 - **Icon**: Select the icon that will be displayed for the card you're creating. Choose from the available icons provided in the icon library.
 - **Content**: Select from the following options:
 - **Page Type**: Select a multiple page (tabular) format.
 - **Orientation**: Select **Vertical** or **Horizontal**.
3. Add tabs and sub tabs to the tabular card:
 - a. To add an existing tab, right-click a tab, click **Add Existing Tab** (or click the **Add Existing Tab** button), and then select a tab from the Object Library.
 - b. To add a new tab, right-click a tab, click **Add New Tab** (or click the **Add New Tab** button), and then edit tab details.
 - c. Right-click a tab, click **Add New Sub Tab** or **Add Existing Sub Tab** (or click the **Add New Sub Tab** or **Add Existing Sub Tab** buttons), and then choose a sub tab from the Object Library or edit sub tab details.
 - d. For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under **My Connections**, and then choose the artifact you want to add to your sub tab.
 - e. Repeat adding tabs and sub tabs until the card is complete.
4. Click **Save and Close**.

 **Note:**

- For cards with multiple tabs or sub tabs, the last tab accessed by a user will be retained the next time the user accesses the card in the same session. If the user logs out and then logs back in, the default tab will be displayed.
- Tabs or sub tabs that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the tab labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.
See Specifying Artifact Labels.

You must reload the navigation flow to view your design time changes. To reload a navigation flow, click the down arrow next to your user name. Then on the **Setting and Actions** menu, click **Reload Navigation Flow**.

Settings and Actions

[Reload Navigation Flow](#)

[Downloads...](#)

[Help...](#)

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[Sign Out](#)

If you can't see your referenced artifacts after reloading the navigation flow, see Handling Issues with Navigation Flows in *Oracle Enterprise Performance Management Cloud Operations Guide*.


Using Direct URLs to Integrate Connected Environments

Other source systems like Oracle ERP Cloud can embed URLs to directly link to artifacts contained in cards, tabs, and sub-tabs within connected Oracle Enterprise Performance Management Cloud environments.

Other Cloud environments like Oracle ERP Cloud use direct URL links to open connected EPM Cloud content like forms, dashboards, infolets, and reports. To make the integration between EPM Cloud and other systems seamless, you can copy the unique URLs for the artifacts within a connected EPM Cloud business process. You can copy the unique URLs in one of two ways:

- Copy the individual URL for an artifact in the business process. See [Copying Direct URLs for Artifacts](#).
- Export all of the URLs in the business process to a CSV file, then find and copy the unique URLs. See [Exporting All URLs to a CSV File](#).

Videos

Your Goal	Watch This Video
Learn how to use direct links to embed EPM Cloud content in other systems such as ERP Cloud and NetSuite.	 Overview: Embed Content Using Direct Links

Copying Direct URLs for Artifacts

Use the **Copy URL** option on the artifact listing page to copy the unique URL for an artifact (dashboards, forms, infolets, and reports) in your Oracle Enterprise Performance Management Cloud business process.



Note:

Copy URL is available to all users so that direct URLs to artifacts can be shared. However, only users with access to the targeted artifact can perform actions on it.

To copy the unique URL for an artifact:

1. From the Home page, open the listing page for the artifact.
For example, click **Dashboards, Data, Infolets, or Reports**.
2. From the listing page, click **•••** next to the artifact, and then select **Copy URL**.
3. The **Copy URL** dialog displays the unique URL for the artifact. Copy the URL.

Copied URLs can, at times, become invalid. Possible reasons for invalid URLs include:

- The artifact is deleted.
- User access for the artifact is revoked.
- The artifact is renamed, which breaks the URL.
- The artifact is moved to a new folder, resulting in a new URL, which breaks the URL.

Exporting All URLs to a CSV File

Use the **Export URLs** option to create a CSV file that provides the unique URLs for each card, tab, or sub-tab within a connected Oracle Enterprise Performance Management Cloud business process. URLs are grouped by navigation flow and cluster, so the URLs are easier to find within the CSV file. You can open the CSV file with a text editor or Microsoft Excel and embed the relevant URL within the source system pages to serve as a launch point into EPM Cloud.

To export EPM Cloud URLs to a CSV file:

1. Log into an EPM Cloud environment.
2. From the Home page, click the down arrow next to the user name (upper right corner of the screen).
3. On the **Settings and Actions** menu, click **Export URLs**, and then click **Save**.

The system saves a CSV file to the default download folder on your local machine, and the filename is automatically generated with the current date and time of the server; for example, 19_Feb_2021_13_15_38_Navigation_Flow_URLs.csv. Find the file in your download folder, and open it with a text editor or with Microsoft Excel.

Viewing the Exported URLs File

The CSV file lists all of the URLs in the business process. Each card, tab (vertical tab), and sub-tab (horizontal tab) has a unique URL. When viewed in a text editor like Notepad or in Microsoft Excel, it identifies the unique URL for each card, tab, and sub-tab, so the URLs for each artifact can be more easily found. URLs are grouped by navigation flow and by cluster.



Note:

Only cards, tabs, and sub-tabs have URLs. Navigation flows and clusters don't have URLs.

Table 9-1 Direct URLs Export File Headers

Header	Description
Navigation Flow Name	The name of the navigation flow; for example, Default or Financial Flow.
Status	Status of the navigation flow; for example, Active or Inactive.
Type	Type of entry; for example, cluster, card, tab, or sub tab
Name	The cluster, card, tab or sub-tab name where the artifact is contained. This entry will be empty for clusters or cards which do not contain an artifact directly.
Artifact Type	The type of artifact; for example, Form, Dashboards, Financial Reports, and URL type artifacts.
Artifact Name	The name of the artifact or, in the case of an URL type artifact, the direct URL of the target page.
	<div style="border-left: 2px solid #f0e68c; padding-left: 10px;"> <p>Caution:</p> <p>If a direct URL is displayed, do not confuse this URL with the unique URL you'll use to integrate the connected environments.</p> </div>
URL	This is the unique URL you will use to integrate connected environments.
Visible	Indicates whether the artifact in the navigation flow is visible on the Home page to users or groups; for example, Y or N.
Role/Group	The role or group who can view the navigation flow. If a navigation flow is Global, then it can be seen by all users.
Description	The description of the navigation flow, if provided.

The URLs export file provides the information separated by a vertical bar or pipe (|) delimiter character. See the following example direct URLs export file as viewed in Notepad:

10

Designing Custom Navigation Flows

Customize the business process interface using navigation flows. Navigation flows enable designers to control how roles or groups interact with the business process.



Related Topics

- [Understanding Navigation Flows](#)
- [Viewing and Working with Navigation Flows](#)

Understanding Navigation Flows

Navigation flows give business process designers control over how various roles, or groups, interact with the business process. The Navigation Flow Designer enables you to customize the business process interface. For example, you can change the names of the cards and clusters that display on the Home page and the order in which they are displayed. You can hide cards, create new cards, and group cards into clusters. You can also customize the vertical and horizontal tabs that display on a card.

Videos

Your Goal	Watch This Video
Learn how to customize navigation flows.	 Designing Navigation Flows in Planning
View the highlights of customizing workflows for connected environments.	 Overview: Configure Navigation Flows to Integrate EPM Cloud Business Processes

Related Topics

- [What Can Be Customized in the Business Process Interface?](#)
- [Navigation Flow Customization Categories](#)
- [Navigation Flow Permissions](#)
- [Predefined Navigation Flows](#)
- [Viewing and Working with Navigation Flows](#)

What Can Be Customized in the Business Process Interface?

Navigation flows are made up of cards. Each card contains content with information that is displayed as one or more tabbed pages. The content included on cards can be URLs or artifacts such as forms, dashboards, reports. Cards can be grouped into clusters.

 **Note:**

If Dashboard 2.0 and Forms 2.0 are enabled in your business process:

- Navigation flows support the features included in Dashboard 2.0 and Forms 2.0, including the ability to edit a form from within the runtime dashboard, and editing it with or without data. Dashboard 2.0 component actions such as **Open Form** and **Edit Form** also work directly within the navigation flow.
- If a dashboard contains multiple components, when you edit a dashboard from within a navigation flow, the focus will be set to the last component in the dashboard.

See Working with 2.0 Dashboards in *Working with Planning*.

Navigation flows can be customized in the following ways:

- Labels for cards or tabs
- Icons that are used for cards or tabs
- Hide and unhide cards and tabs
- Display order of cards and tabs
- Add new cards
- Add existing cards
- Add new horizontal or vertical tabs
- Remove navigation flows, cards, and tabs
- Group cards into clusters
- Add existing clusters

See [Viewing and Working with Navigation Flows](#).

Navigation Flow Customization Categories

Navigation flows are categorized as follows for customization:

1. **Global:** Navigation flows are seen by all users
2. **Role:** Navigation flows are seen only by users in a specific role; for example, Service Administrator or Power User
3. **Group:** Navigation flows are seen only by users belonging to a specific group; for example, Sales

Navigation flows can be defined at any of these levels. In cases where navigation flows exist at multiple levels, updates are applied in the order of highest (global) to lowest (groups).

For example, if you create a navigation flow that displays an icon on the Home page named "My Tasks", and then another Service Administrator duplicates the navigation flow, makes the following changes to the card, and then associates the navigation flow with a group:

- At the global level, they rename "My Tasks" to "Company Tasks"
- At the group level, for a group named Sales, they rename "My Tasks" to "Sales Tasks"

Users who belong to the group called Sales will see the label "Sales Tasks" in the navigation flow instead of "My Tasks," and all other users will see the label "Company Tasks".

Navigation Flow Permissions

The business process offers three levels of permissions for navigation flows:

- Role-based: Permissions are granted to users or groups assigned to a specific role; for example, a User will see different cards displayed on the Home page than a Service Administrator
- Artifact-based: Permissions are granted to users or groups who can see certain artifacts; for example, a User will see only the forms to which they have been assigned permission
- Global: Permissions are granted to all users

Predefined Navigation Flows

The business process comes with one predefined navigation flow, called Default. The Default navigation flow is read only; therefore, you can't make any modifications to it.

These are the operations you can and cannot perform on the Default navigation flow:

- Name: You can't modify the name.
- Delete: You can't delete the navigation flow.
- Edit: You can view the navigation flow details, but you can't change anything.
- Activate or Deactivate: You can activate or deactivate the navigation flow.
- Duplicate: You can make a copy of the navigation flow.

Understanding Navigation Flow Status after Import

When you import a snapshot containing an active navigation flow into an environment containing an active navigation flow of the same category (role, group, or global), then the new navigation flow being imported is deactivated.

For example, the following navigation flows are currently active on your system:

- NF Sales Q2 (Sales group)
- NF Administrator (Service Administrator role)
- NF Custom Default (global)

Let's say you import a navigation flow called NF Sales Q3, which uses the same Sales group as NF Sales Q2. The NF Sales Q3 navigation flow will be imported as inactive and the existing NF Sales Q2 will remain active for the Sales group. If you want the new NF Sales Q3 to be active, you must manually activate it (which will inactivate the old NF Sales Q2). We deactivate the imported Q3 navigation flow because the import might occur ahead of the Q3 start date, and we want to ensure the Q3 navigation flow isn't activated before the Q3 start date.

If a new application is created from a Migration snapshot that includes an active custom global navigation flow (for example, NF Custom), the NF Custom global navigation flow will become inactive after Migration import. The same is true if the application is cloned. The Default global navigation flow will become the active global navigation flow and you'll need to ensure you activate the global NF Custom navigation flow after the new application is created. If all users are using the NF Custom global navigation flow, they might experience a service interruption until the NF Custom navigation flow is activated.

When designing navigation flows:

- Create navigation flows for specific groups or classes of users. Then associate the navigation flow to corresponding user groups.
- Avoid creating one global navigation flow for all users.

Viewing and Working with Navigation Flows

Users assigned the Service Administrator role can view all navigation flows, including the predefined navigation flow, on the Navigation Flows page. Users assigned to other roles and groups will only see the navigation flows to which they have access.

The Navigation Flow page lists each navigation flow by name, indicates the role or the group that has access to the navigation flow (if assigned), and provides a description of the navigation flow (if provided). The listing also indicates whether the navigation flow is active or not.


Viewing Navigation Flows

To view the Navigation Flow page:

1. On the Home page, click **Tools**.
2. Click **Navigation Flows**.

Working with Navigation Flows

To work with a navigation flow, perform an action:

- For design best practices and considerations, see [Navigation Flow Design Best Practices and Naming Considerations](#).
- To create and duplicate navigation flows, see [Creating and Duplicating Navigation Flows](#).
- To edit a navigation flow, see [Editing a Navigation Flow](#).
- To activate or deactivate a navigation flow, see [Activating and Deactivating Navigation Flows](#).
- To validate navigation flows and to learn how to find and resolve navigation flow elements with missing artifacts, see [Using Validate to Find Missing Artifacts in Navigation Flows](#).
- To resolve a navigation flow in the listing that is displaying a warning icon , see [Resolving Navigation Flows that Display a Warning Icon](#).
- To rename cards and tabs, see [Customizing Labels for Cards, Tabs, and Clusters](#).
- To customize the graphics used for cards and tabs, see [Customizing Icons for Cards and Vertical Tabs](#).
- To hide and unhide cards and tabs, see [Hiding and Unhiding Clusters, Cards, and Tabs](#).
- To change the display order of cards on the Home page, see [Changing the Display Order of Cards on the Home Page](#).
- To add cards, see [Adding Cards](#).
- To add tabs, see [Adding Tabs to a Tabular Page](#).
- To remove navigation flows, cards, and tabs, see [Removing Navigation Flows, Cards, and Tabs](#).
- To group cards into clusters, see [Grouping Cards into Clusters](#).

Troubleshooting

For help with resolving navigation flow issues, see *Handling Issues with Navigation Flows* in *Oracle Enterprise Performance Management Cloud Operations Guide*.

Navigation Flow Design Best Practices and Naming Considerations

Design Best Practices

To provide an optimal user experience and to avoid excessive scrolling on the Home page and within cards and tabs, you must adhere to the following guidelines when designing navigation flows:

- Keep the top level items (cards and clusters) to no more than 16 visible items.
- Add no more than 16 visible cards to a cluster.
- Add no more than 10 visible vertical tabs within a card.
- Add no more than 20 visible sub tabs (horizontal tabs) within a vertical tab.
- Label names on sub tabs (horizontal tabs) display only the first 30 characters at runtime. Hovering your cursor over the tab reveals the entire label.



Note:

If you attempt to exceed the visibility limits, you will see a warning message telling you that you've exceeded the limit.

Naming Considerations


There are naming restrictions for navigation flows, cards, clusters, tabs, and infolets (if your business process uses infolets) in navigation flows. You cannot use these special characters:

- ampersand (&)
- less than sign (<)
- greater than sign (>)
- quotation mark (")
- backslash (\)
- plus sign (+)

Creating and Duplicating Navigation Flows

To create a navigation flow, you must first select an existing navigation flow and make a copy of it. Then edit the duplicate navigation flow details and save them.

To create and duplicate a navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the upper right-hand corner of the page, click , and then select **Create Copy**.
3. Enter a name for the navigation flow, and then click **OK**.

 **Note:**

Ensure that you adhere to the navigation flow naming restrictions outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

4. Edit details for the navigation flow. See [Editing a Navigation Flow](#).

 **Note:**

New flows are marked **Inactive** until they are activated by the Service Administrator. To activate a navigation flow, see [Activating and Deactivating Navigation Flows](#).

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Editing a Navigation Flow


To edit a navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. Click the name of the navigation flow you want to edit.

 **Note:**

The predefined navigation flow isn't editable. However, you can create a copy of a predefined navigation flow and edit the copy. See [Predefined Navigation Flows](#).

You'll see a page listing the cards and clusters in the navigation flow. On this page you can edit the role or group assignment, designate which clusters and cards are visible on the Home page, change the order in which the navigation flow clusters and cards are displayed, add cards to clusters or remove them, and remove clusters and cards from the navigation flow.

- **Assign To:** Click  to assign the navigation flow to a group of users or to a role.
- **Visible:** Edit the visibility of the navigation flow clusters and cards on the Home page by selecting or deselecting them in the **Visible** column.

 **Note:**

Ensure that you adhere to the navigation flow guidelines for visibility outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

- **Order:** Clusters and cards are listed in the order in which they are displayed on the Home page, if visible. Selecting an up or down arrow option repositions the clusters and cards in the listing and changes the display order of the clusters and cards on the Home page. Selecting the right arrow moves a card into a cluster.

- **Remove:** Removes the cluster or card from the navigation flow.
3. Click a cluster or card to edit details. For descriptions of card details, see the following topics:
 - [Adding Cards](#)
 - [Adding Tabs to a Tabular Page](#)

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Activating and Deactivating Navigation Flows

You can create multiple navigation flows for each category (global, role, or group), but only one navigation flow can be active in each category. Whenever you make a navigation flow active, the other navigation flows in the same category will become inactive.

Note:

Each business process requires one active global navigation flow. To make a different global navigation flow active, select another global navigation flow and activate it.

For information about categories, see [Navigation Flow Customization Categories](#).


These are the operations users can and cannot perform on an active navigation flow:

- Name: Users can't modify the name.
- Delete: Users can't delete the navigation flow.
- Edit:
 - Users can view the navigation flow definition, but they can't change anything.
 - If the business process is in administration mode, then users can save any modifications.
- Activate or Deactivate: Users can activate or deactivate a navigation flow.
- Duplicate: Users can make a copy of a navigation flow.


To activate or deactivate a navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the **Active** column, click **Active** or **Inactive**. An active flow will be marked inactive. Conversely, an inactive flow will be marked active.




Using Validate to Find Missing Artifacts in Navigation Flows

While viewing the Navigation Flow listing, you might see navigation flow nodes or artifacts displaying an error icon . This error occurs because artifacts that were associated with the navigation flow were either renamed or removed and they are now considered missing. You'll need to edit the navigation flow to associate it with either a renamed artifact or with a different artifact before you can activate the navigation flow. You might not realize that artifacts are considered missing, so it's recommended that you validate your navigation flows before setting them to Active status.

 **Note:**


To resolve a navigation flow displaying a warning icon , see [Resolving Navigation Flows that Display a Warning Icon](#).

To validate navigation flows to find missing artifacts and reassociate them:


1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. If they aren't already deactivated, set the navigation flows you want to validate to **Inactive** status. See [Activating and Deactivating Navigation Flows](#).
3. Highlight the row or rows of the navigation flows you want to validate.
4. Click , and then select **Validate**.
If artifacts are missing, you'll see an error message indicating which navigation flows are referencing artifacts that cannot be found.
5. Click the name of each navigation flow with the error, and then expand the nodes which display the error icon  until you reach the Manage page which displays the missing artifact.
6. For **Artifact**, click  to select the renamed artifact or a different artifact in the Artifact Library.
7. Click **Save and Close**.
8. Repeat the validation on your navigation flows and drill down to make corrections, as needed, until you see a message indicating the navigation flows are valid.
9. Activate the navigation flows. See [Activating and Deactivating Navigation Flows](#).

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).


Resolving Navigation Flows that Display a Warning Icon


While viewing the Navigation Flow listing, you might see a navigation flow displaying a warning icon . This occurs because the group that was associated with the navigation flow was deleted. You'll need to edit the navigation flow to associate it with a group or role before you can activate the navigation flow.

 **Note:**

To resolve navigation flows displaying an error icon , see [Using Validate to Find Missing Artifacts in Navigation Flows](#).

To resolve the navigation flow:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. Click the name of the navigation flow displaying the warning icon .

3. For **Assign To**, click  to assign the navigation flow to a group of users or to a role, then click **Save and Close**.
 4. Activate the navigation flow. See [Activating and Deactivating Navigation Flows](#).
- To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Customizing Labels for Cards, Tabs, and Clusters

You can customize the labels for cards (the icons that display on the Home page), tabs, and clusters. Labels are limited to 25 characters or less. For vertical tabs, there is no character limitation since the label for vertical tabs displays as hover text.



Note:

Do not update the labels for cards, tabs, or clusters against the Default navigation flow. Only customize labels for custom navigation flows.

To customize labels for cards, tabs, and clusters:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. If customizing the label for a card or cluster:
 - a. Click the name of the card or cluster you want to edit.
 - b. Enter a new name and save it.



Note:

- You can edit the label here. However, if the label is defined in the **Artifact Labels** page on the **Tools** cluster, that definition will take precedence and will display during runtime. To change a label permanently, redefine it in the **Artifact Labels** page.
See [Specifying Artifact Labels](#).
- Ensure that you adhere to the naming restrictions outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

3. If customizing the label for a tab:
 - a. Click the name of the card you want to edit.
 - b. In the tab listing on the **Manage Tab** page, click the name of the tab you want to edit.
 - c. Enter a new name for the tab and save it.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Customizing Icons for Cards and Vertical Tabs

You can change the icons used for cards and vertical tabs. You must pick from the available icons provided in the icon library.

To customize the icons for cards and vertical tabs:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. If customizing the icon for a card:
 - a. Click the name of the card you want to edit.
 - b. Click the icon for the card, select a new icon from the library, and then save it.
3. If customizing the icon for a tab:
 - a. Click the name of the icon you want to edit.
 - b. In the tab listing on the **Manage Tab** page, click the name of the tab you want to edit.
 - c. Click the icon for the tab, select a new icon from the library, and then save it.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Hiding and Unhiding Clusters, Cards, and Tabs

You cannot hide the following navigation elements:

- The **Application** cluster and the **Settings** icon in the **Application** cluster.
- The **Tools** cluster and these icons in the **Tools** cluster:
 - **Access Control**
 - **Navigation Flows**
 - **Daily Maintenance**
 - **Migration**

Ensure that you adhere to the navigation flow guidelines for visibility outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

To hide and unhide clusters, cards, and tabs:

1. Click the **Navigation Flow** icon and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. Edit the Home page visibility of the navigation flow clusters and cards by selecting or deselecting them in the **Visible** column.
3. If hiding or unhiding a tab:
 - a. Click the name of the card you want to edit.
 - b. In the tab listing on the **Manage Tab** page, select or deselect the check box in the **Visible** column.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Changing the Display Order of Cards on the Home Page

You can change the display order of cards in the Navigation Flow Designer. Cards display on the Home page in the order they appear within the listing

To change the display order of the cards on the Home page:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. In the listing, use the up and down arrows in the **Order** column to move cards up or down in the navigation flow order.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).



Adding Cards

The icons you see on the Home page represent cards. Cards are specific to each functional area of the business process. Each card navigates users to the corresponding area, where other information is displayed as one or more tabbed pages. You can create single page or multiple page (tabular) cards.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

You can also group cards into clusters. See [Grouping Cards into Clusters](#).

To add cards to a navigation flow:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. To add an existing card to the navigation flow, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, and then select a card. If there is an existing card you want to add from another environment, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the card you want to add to your navigation flow.

Note the following:

- Cards can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Cards that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the card labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.
See [Specifying Artifact Labels](#).
- A reference card is a card that is already referenced from another navigation flow. References to already referenced cards are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing card; for example:
 - A card referring to a remote artifact or remote tab will not be available from the Object Library when adding an existing card.
 - A card referring to a tab from another navigation flow will not be available from the Object Library when adding an existing card.

A card is added to the list as a sibling under the card or cluster that is currently selected. To add a card to a cluster, see [Grouping Cards into Clusters](#).

Note:

Cards that are added without first selecting a card or cluster are added to the end of the list.



3. To add a new card to the navigation flow, right-click a node in the list (or click ) , click **Add Card**, and then select details for the new card:

Table 10-1 New Card Details

Label	Description
Name	Enter a label for the card. Ensure that you adhere to the naming restrictions outlined in Navigation Flow Design Best Practices and Naming Considerations .
Visible	Select whether the card is visible to users on the Home page.
Cluster	If clusters exist, select a cluster for the card or select None .
Icon	Select the graphic that will be displayed for the card you're creating. Choose from the available graphics provided in the graphics library.
Page Type	Select Single Page or Tabular Page format.
Content Source	If you selected the Single Page format, select Artifact or URL : <ul style="list-style-type: none"> For Artifact, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under My Connections, and then choose the artifact you want to add. For URL, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a card, then click Preview to validate the URL in a popup window. Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See About Using URLs to Embed Third-Party Pages in EPM Cloud Applications.
Orientation	If you selected the Tabular Page format, select Vertical or Horizontal , and then add new or existing tabs and sub tabs. See Adding Tabs to a Tabular Page .

A card is added to the list as a sibling under the card or cluster that is currently selected. To add a card to a cluster, see [Grouping Cards into Clusters](#).

 **Note:**

Cards that are added without first selecting a card or cluster are added to the end of the list.

4. Click **Save and Close**.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Adding Tabs to a Tabular Page

Tabs can be horizontal or vertical. For example, the **Valid Intersections** card (under the **Application** cluster) is a tabular page with two horizontal tabs: **Setup** and **Reports**.


 **Note:**

If Redwood Experience is enabled, the **Setup** and **Reports** tabs are at the bottom of the page.

You can also create tabular pages with vertical tabs. Vertical tabs display a graphic and text appears when the cursor is hovered over the tab. Horizontal tabs display labels with text only or text with icons.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

To add tabs to a tabular page:

1. Open the **Navigation Flow** page and click the name of the navigation flow you want to edit. See [Viewing and Working with Navigation Flows](#).
2. Edit an existing card by clicking the name of the card you want to edit, or add a new card by right-clicking a card (or clicking ), and then clicking **Add Card**.
3. On the **Manage Card** page, select the following options:
 - For **Page Type**, select **Tabular Page**.
 - For **Orientation**, select **Vertical** or **Horizontal**.


A tab listing displays at the bottom of the **Manage Card** page.

4. To edit an existing tab, click a tab name from the tab listing, and edit tab details.
5. To add a new or existing tab:
 - a. To add an existing tab, right-click a tab in the listing at the bottom of the **Manage Card** page, click **Add Existing Tab** (or click the **Add Existing Tab** button), select a tab from the Object Library, and then click **OK**.

 **Note:**

A reference tab is a tab that is already referenced from another navigation flow. References to already referenced tabs are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing tab; for example:

- A tab referring to a remote artifact or remote sub-tab will not be available from the Object Library when adding an existing tab.
- A tab referring to a sub tab from another navigation flow will not be available from the Object Library when adding an existing tab.

- b. To add a new tab, right-click a tab, click **Add New Tab** (or click the **Add New Tab** button), and then edit tab details.
- c. Select the content for the new tab:
 - For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another

environment, select the target environment under **My Connections**, and then choose the artifact you want to add.


- For **URL**, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a tab, then click **Preview** to validate the URL in a popup window.

Insert only external site URLs starting with the `https://` security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See [About Using URLs to Embed Third-Party Pages in EPM Cloud Applications](#).

A tab is added to the list as a sibling under the tab that is currently selected.

 **Note:**

Tabs that are added without first selecting a tab are added to the end of the list.

6. To add new or existing sub tabs to a tab:
 - a. Click the name of a tab in the in the tab listing.
 - b. For **Page Type**, select **Tabular Page**.
 - c. Right-click a tab, and click **Add New Sub Tab** or **Add Existing Sub Tab** (or click the **Add New Sub Tab** or **Add Existing Sub Tab** button), and then edit sub tab details.
 - d. Select the content for the new sub tab:
 - For **Artifact**, click  to select an artifact in the Artifact Library; for example, if the artifact is a form, then select the specific form from the artifact listing. Available artifacts include forms, dashboards, and reports. To select an artifact from another environment, select the target environment under **My Connections**, and then choose the artifact you want to add.
 - For **URL**, enter a complete URL; for example, a URL to embed an Oracle Analytics Cloud dashboard in a sub tab. Click **Preview** to validate the URL in a popup window.

Insert only external site URLs starting with the `https://` security protocol. Don't use internal or relative URLs or URLs for unconsenting third-party sites. See [About Using URLs to Embed Third-Party Pages in EPM Cloud Applications](#).

A sub tab is added to the list as a sibling under the tab that is currently selected.

 **Note:**

Sub tabs that are added without first selecting a tab are added to the end of the list.

7. Click **Save and Close**.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

 **Note:**

- For cards with multiple tabs or sub tabs, the last tab accessed by a user will be retained the next time the user accesses the card in the same session. If the user logs out and then logs back in, the default tab will be displayed.
- Tabs or sub tabs that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the tab labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.
See Specifying Artifact Labels.

About Using URLs to Embed Third-Party Pages in EPM Cloud Applications

Oracle Enterprise Performance Management Cloud uses IFrame to embed third-party URLs. IFrame requires that the page that is being embedded must give approval to the page that is embedding it. For example, if we want to embed a page from sharepoint.com into an EPM Cloud application, then sharepoint.com must allow oraclecloud.com to embed the page from sharepoint.com.

This can be achieved by adding oraclecloud.com in the [Content Security Policy](#) of the web application whose page you need to embed.

When embedding a third-party page you also must consider if the page is available to the public or if it requires a login. For example, pages from wikipedia.org do not need any authentication.

If you are embedding a page that requires authentication, you need to see if SSO can be enabled for the page. If not, then your page may not load inside IFrame. As a workaround, log in to that web application in another browser tab, and then if you access the same page from the EPM Cloud application, it will open.

This URL support feature allows you to embed the following types of pages:

- Other Oracle products (would need to enable SSO)
- Web applications owned by customer (would need to allow the EPM Cloud application by updating the Content Security Policy and enabling SSO, or likewise)
- Pages from the public domain (for example, wikipedia.org)

 **Note:**

Though not supported by Oracle, you can also embed links to the following resources within navigation flow cards, tabs, and sub tabs:

- Google Sheets
- Files stored in Google Drive (for example, PDF and Excel)
- Files stored in Microsoft Office 365


Use the instructions provided by the third-party sites to generate a URL which can then be used in your EPM Cloud application.

Removing Navigation Flows, Cards, and Tabs

You can't remove the following navigation elements:



- The **Application** cluster and the **Settings** icon in the **Application** cluster.
- The **Tools** cluster and these icons in the **Tools** cluster:
 - **Access Control**
 - **Navigation Flows**
 - **Daily Maintenance**
 - **Migration**

To remove navigation flows, cards, and tabs:

1. Open the **Navigation Flow** page. See [Viewing and Working with Navigation Flows](#).
2. If removing a navigation flow:
 - a. Select the navigation flow you want to remove.
 - b. In the upper right-hand corner of the page, click , and then select **Delete**.

Note:

You can't delete the predefined navigation flow, called Default.

3. If removing a card:
 - a. Click the name of the navigation flow you want to edit.
 - b. In the **Remove** column for the card you want to remove, click .
4. If removing a tab:
 - a. Click the name of the navigation flow you want to edit.
 - b. Click the name of the card you want to edit.
 - c. In the tab listing at the bottom of the **Manage Tab** page, in the **Remove** column for the tab you want to remove, click .

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).


Grouping Cards into Clusters

A cluster is a grouping of cards. You must first create a cluster and then you can assign cards to it. You can also add existing clusters to navigation flows.

To ensure an optimal user experience, review the navigation flow design best practices. See [Navigation Flow Design Best Practices and Naming Considerations](#).

To assign cards to clusters:

1. Create a new cluster or add an existing cluster:
 - a. Open the **Navigation Flow** page and click the name of the navigation flow in which you want to add a cluster. See [Viewing and Working with Navigation Flows](#).

- b. To create a new cluster, right-click a card or cluster in the list (or click ) , click **Add Cluster**, enter or select the cluster details, and then choose a graphic for the cluster.



 **Note:**

Ensure that you adhere to the visibility and naming restrictions outlined in [Navigation Flow Design Best Practices and Naming Considerations](#).

A cluster is added to the list as a sibling under the cluster that is currently selected.

 **Note:**

Clusters that are added without first selecting a card or cluster are added to the end of the list.

- c. To add an existing cluster, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**. If there is an existing cluster you want to add from another environment, right-click a card or cluster in the list (or click ) , click **Add Existing Card/Cluster**, select the target environment under **My Connections**, and then choose the cluster you want to add to your navigation flow.



 **Note:**

- Clusters can't be directly selected from Narrative Reporting and Profitability and Cost Management using the **Add Existing Card/Cluster** option.
- Clusters that are added from another navigation flow or from another environment will display the localized labels that were defined in the source navigation flow. To update the cluster labels in your navigation flow, on the Home page, click **Tools**, and then click **Artifact Labels**.
See [Specifying Artifact Labels](#).
- A reference cluster is a cluster that is already referenced from another navigation flow. References to already referenced clusters are not supported in navigation flows and will not be available for selection in the Object Library when adding an existing cluster.

A cluster is added to the list as a sibling under the card or cluster that is currently selected.

 **Note:**

Clusters that are added without first selecting a card or cluster are added to the end of the list.

- d. Click **Save and Close**.
2. Select the cards to include in the cluster using one of these options:
 - a. Navigate to the card you want to add. If the card is within another environment, first select the environment under **My Connections**, and then navigate to the card in that environment. Assign the card to a cluster using one of these options:
 - To the right of the card in the **Order** column, click , select the cluster, and then click **OK**.
 - Click the name of the card to view the card details, then for **Cluster** select a cluster for the card, and then click **OK**.
 - b. Navigate to the cluster in which you want to add a card, then right-click the cluster (or click ) , click **Add Card In Cluster**, and then select an option:
 - Select **Add Existing Card**, to select an existing card or to add existing cards from another cluster to the selected cluster.
 - Select **Add Card**, and then enter card details to add a new card to the selected cluster.

 **Note:**

You cannot add a card to a cluster if the card or the cluster is already referenced from another navigation flow.

- c. Click **Save and Close**.

The cards will appear in the listing as children of the cluster. Use the up and down arrows next to the cards to reorder the cards within the cluster, if needed.

To reload a navigation flow to view design time changes, see [Reloading a Navigation Flow](#).

Reloading a Navigation Flow

To display design changes while you're working with a navigation flow, you can reload the navigation flow.

To reload a navigation flow after making design changes:

1. From the Home page, click the down arrow next to the user name (upper right corner of the screen).
2. On the **Settings and Actions** menu, click **Reload Navigation Flow**.


Switching Navigation Flows at Runtime

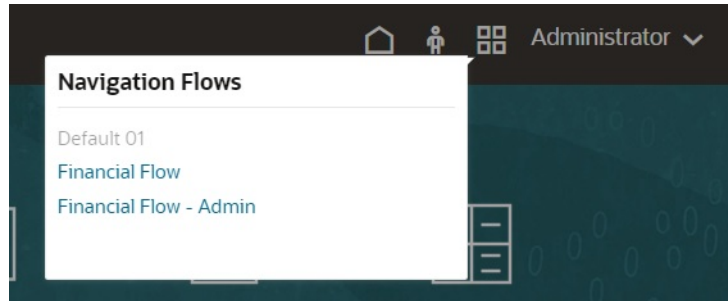
If you belong to multiple groups or if a navigation flow is assigned to a role, you might have access to more than one navigation flow.

 **Note:**

Users assigned the Service Administrator role can access all navigation flows.

To switch navigation flows at runtime:

1. From the Home page, click .
2. Select the navigation flow you want to view.



Sharing the Current Page URL for Cards, Tabs, and Sub Tabs

Copy the URL for the currently displayed card, tab, or sub tab and share it with other users who have access.

Use the **Share Current Page URL** option on the **Settings and Actions** menu to copy the URL for the currently displayed card, tab, or sub tab in your Oracle Enterprise Performance Management Cloud business process.

URLs can be copied and then shared with other users in an email, Slack, or any other messaging application. Also, copied URLs can be used in a slide show presentation such as PowerPoint. Note that users can only access cards, tabs, or sub tabs if they are authorized to access them.

When the copied URL is launched the page will be rendered with the full header, meaning they will be able to navigate to all of the pages to which they have access within the navigation flow. If the user launching the URL is not logged in, they will be redirected to a login page, then after login the URL page will open.

To copy a URL for sharing:

1. Navigate to the page (card, tab, or sub tab) in your application that you want to copy.
For example, from the Home page, click Dashboards to view the Dashboards page.
2. Click the down arrow next to your user name (upper right corner of the screen).
3. On the **Settings and Actions** menu, select **Share Current Page URL**.

Note:

The **Share Current Page URL** menu option only displays if you're currently viewing a card, tab, or sub tab. If you're currently viewing the Home page, the **Share Current Page URL** menu option won't display on the **Settings and Actions** menu.

4. Select the displayed URL and copy it by pressing Ctrl+C.

After pasting it into a browser, the URL will enable direct access to the current page in the application.

Considerations

Note the following considerations when using the **Share Current Page URL** option:

- The page specified in the URL will not open if the navigation flow was deleted, modified, or made inactive. Instead, you'll be redirected to the home page of the currently active navigation flow.
- If you're using a classic environment, you cannot share URLs. URLs are not supported for classic pages.
- URLs cannot be embedded into dashboards as the content source.
- URLs cannot be embedded into navigation flows as the content source.
- URLs cannot be shared for pages with dynamic tabs. Dynamic tabs are local and limited to the current user session, and therefore cannot be shared.
- URLs cannot be shared for infolets. URLs are not supported for infolets.

11

Editing Dimensions in the Simplified Dimension Editor

Work with application dimensions and members in the simplified grid interface.

Related Topics

- [About Editing Dimensions in the Simplified Dimension Editor](#)
The Simplified dimension editor displays dimensions and members in a grid format.
- [Dimension Overview](#)
- [About Dimensions and Members](#)
- [About Sparse and Dense Dimensions](#)
- [About Dimension Hierarchies](#)
- [About Custom Dimensions](#)
- [Aggregation Options](#)
- [Storage Options](#)
- [About Entities](#)
- [About Accounts](#)
- [Account Types](#)
- [Saved Assumptions](#)
- [Data Type and Exchange Rate Type](#)
- [Accounts, Entities, Periods, and Cubes](#)
- [Accessing the Simplified Dimension Editor](#)
- [Working in the Edit Member Properties Grid](#)
Work with elements in the **Edit Member Properties** grid interface.
- [Switching to Another Dimension](#)
- [Customizing the Column Layout](#)
- [Context Menu Options](#)
- [Viewing Ancestors](#)
- [Showing Member Usage in an Application](#)
- [Focusing Your Editing](#)
- [Finding Members](#)
- [Moving Members](#)
- [Sorting Members](#)
- [Moving Members to Another Hierarchy](#)
- [Working with Member Formulas](#)
- [Copying Member Names from Microsoft Excel](#)

- [Editing Member Properties](#)
- [Accessing Edit Member Properties](#)
- [Adding Members](#)
- [Editing Members](#)
- [Deleting Members](#)
- [Adding Shared Members](#)
- [Assigning Access to Dimension Members](#)
- [Adding, Editing, and Removing Access to Members](#)
- [About Effective Access Permissions to Shared Members](#)
- [Editing Dimension Properties](#)
- [Working with Attributes](#)
- [Deleting Attributes](#)
- [Working with UDAs](#)
- [Working with Attribute Values](#)
- [Setting Up Scenarios and Specifying Versions](#)
- [Setting Up Scenarios](#)
- [About Scenarios](#)
- [Creating, Editing, and Deleting Scenarios](#)
- [Copying Scenarios](#)
- [Specifying Versions](#)
- [About Versions](#)
- [Target and Bottom Up Versions](#)
- [Creating, Editing, and Deleting Versions](#)
- [Viewing Version Types](#)

About Editing Dimensions in the Simplified Dimension Editor

The Simplified dimension editor displays dimensions and members in a grid format.

 **Note:**

This section documents how to edit dimensions using the Simplified dimension editor which was released in the 17.05 (May 2017) update.

To use the Classic Dimension Editor, which is accessed by using the **Dimensions** link in the Navigator menu, see [Administering Dimensions](#).

With the grid format, dimensions and members are editable on a single page. You can edit member properties directly on the grid and you can perform ad hoc operations such as zooming in, zooming out, keep selected, remove selected, and freeze. In addition:


- The grid provides the ability to do a filtered search within the grid and to reorder columns using drag-and-drop. The expansion states of the member hierarchy in the grid are saved for the next session.
- The column selector interface enables you to select the columns that will display within the grid. The column selector groups properties according to their functionality and saves the column selections that you add to the grid for the next session. There is also an option to resize the columns so that all columns are visible on the grid without scrolling.

Videos

Your Goal	Watch This Video
Get an introduction to the Simplified dimension editor.	 Overview: Dimension Editor in Planning

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to add and edit dimensions and members in the Simplified dimension editor.	 Managing Dimensions in Planning

Dimension Overview

Related Topics

- [About Dimensions and Members](#)
- [About Sparse and Dense Dimensions](#)
- [About Dimension Hierarchies](#)
- [About Custom Dimensions](#)
- [About Entities](#)
- [About Accounts](#)
- [Accounts, Entities, Periods, and Cubes](#)

About Dimensions and Members

Dimensions are data categories used to organize business data for retrieval and preservation of values.

Dimensions contain hierarchies of related *members* grouped within them. For example, a Years dimension often includes members for each time period, such as quarters and months.

Planning includes seven dimensions: Account, Entity, Scenario, Version, Period, Years, and Currency. You can create up to 32 user-defined custom dimensions.

About Sparse and Dense Dimensions

Sparse dimensions lack data values for the majority of member combinations. Dense dimensions have data values for the majority of member combinations. At least one dense

dimension is required. Custom attributes can't be assigned to dense dimensions. The application designates the Account and Period dimensions as dense, and the remaining dimensions as sparse. To optimize performance for sparse dimensions, the application searches for and calculates only occupied data values in each dimension combination, reducing calculation time and disk usage. You can modify these settings.

About Dimension Hierarchies

Dimension hierarchies define structural and mathematical relationships, and consolidations between members in the application. Relationships are represented graphically in a collapsible hierarchy diagram. The levels below the cube name are dimensions, and the levels below each dimension are members.

The Period dimension can contain the member YearTotal, which contains members Q1, Q2, Q3, and Q4. Members Q1, Q2, Q3, and Q4 contain their own members for the corresponding months in the year. To consolidate data values in the Period dimension, roll up monthly data values to get quarterly data values, and quarterly data values to get yearly data values.

Members of the same level that belong to the same dimension or member are called siblings. For example, Q1, Q2, Q3, and Q4 are siblings because they are at the same level in the hierarchy, and are members of the same member, YearTotal.

The members of a dimension are called children of the dimension. Members that belong to a member are called children of that member. The member YearTotal is a child of Period, the members of Q1, Q2, Q3, and Q4 are children of YearTotal, and Jan, Feb, and Mar are children of Q1. Q1 is the parent of Jan, Feb, and Mar, YearTotal is the parent of Q1, Q2, Q3, and Q4, and Period is the parent of YearTotal.

About Custom Dimensions

The application includes two custom dimensions: Account and Entity. You can edit the names of these dimensions, and create up to 32 user-defined dimensions.

Caution:

You can't delete custom dimensions after you create them.

Use Account and user-defined dimensions to specify data to gather from users. Use Entity to model the flow of planning information in the organization and establish the plan review path.

- [Aggregation Options](#)
- [Storage Options](#)

Aggregation Options

You can define calculations within dimension hierarchies using aggregation options. Aggregation options determine how child member values aggregate to parent members:

- + Addition
- - Subtraction
- * Multiplication
- / Division

- % Percent
- ~ Ignore
- Never (don't aggregate, regardless of hierarchy)

Storage Options

When working with dimensions, it's important to understand the different data storage options and how to use them in the business process.

- [Storage Options](#)
- [About Dynamic Calc](#)
- [Dynamic Calc Versus Dynamic Calc and Store](#)
- [About Store Data Storage](#)
- [About Shared Data Storage](#)
- [About Never Share Data Storage](#)
- [About Label Only Data Storage](#)

Storage Options

Table 11-1 Storage Options

Option	Impact
Dynamic Calc and Store	Calculates data values of members, and stores values.
Store	Stores data values of members.
Dynamic Calc	Calculates data values of members, and disregards the values.
Never Share	Prohibits members in the same dimension from sharing data values.
Shared	Allows members in the same dimension to share data values.
Label Only	Has no data associated with the member.

About Dynamic Calc

With dynamically calculated members, the application calculates data values of members, and disregards these values. As a best practice, Oracle recommends a limit of 100 children under a **Dynamic Calc** parent. Changing a member's storage to **Dynamic Calc** may result in loss of data, depending on how the data was originally derived. You may need to update outlines, calculations, or both to get the dynamically calculated value.

Dynamic Calc Versus Dynamic Calc and Store

In most cases, you can optimize calculations and lower disk usage by using **Dynamic Calc** instead of **Dynamic Calc and Store** when calculating members of sparse dimensions. Use **Dynamic Calc and Store** for members of sparse dimensions with complex formulas, or that users retrieve frequently.

For members of dense dimensions, use **Dynamic Calc**. **Dynamic Calc and Store** provides only a small decrease in retrieval time and regular calculation time, and doesn't significantly lower disk usage. For data values accessed concurrently by many users, use **Dynamic Calc**. Retrieval time may be significantly lower than for **Dynamic Calc and Store**.

 **Note:**

- Don't use **Dynamic Calc** for base-level members for which users enter data.
- Don't use **Dynamic Calc** for a parent member if you enter data for that member in a target version. Parent members set to **Dynamic Calc** are read-only in target versions.
- Data values are not saved for **Dynamic Calc** members.

About Store Data Storage

Don't set parent members to **Store** if their children are set to **Dynamic Calc**. With this combination, new totals for parents are not calculated when users save and refresh forms.

About Shared Data Storage

Use **Shared** to allow alternate rollup structures in the application.

About Never Share Data Storage

The default data storage type is **Never Share** when you add user-defined custom dimensions. You can use **Never Share** for parent members with only one child member that aggregates to the parent, to apply access to the child member.

About Label Only Data Storage

Label Only members are virtual members; they are typically used for navigation and have no associated data.

 **Note:**

- You can't assign level 0 members as **Label Only**.
- **Label Only** members can display values.
- Making dimension members **Label Only** minimizes database space by decreasing block size.
- You can't assign attributes to **Label Only** members.
- In a multicurrency application, you can't apply **Label Only** storage to members of these dimensions: Entity, Versions, Currencies, and user-defined custom dimensions. To store exchange rates, use **Never Share**.
- Data storage for children of **Label Only** parents is set to **Never Share** by default.

 **Caution:**

Don't design forms in which **Label Only** parents follow their first child member, as you can't save data in the first child member. Instead, create forms with **Label Only** parents selected before their children, or don't select **Label Only** parents for forms.

About Entities

Entities typically match your organization's structure, such as geographical regions, departments, or divisions. Create entity members for groups that submit plans for approval. Entity members help define budget review, or approvals.

See [Managing Approvals](#).

For example, you may have regional centers preparing budgets for country headquarters. The country headquarters may prepare plans for corporate headquarters. To match this structure, create members for the regions, countries and headquarters. Specify regions as children of country members, and country members as children of headquarters.

Forms support multiple currencies per entity, enabling data entry for multiple currencies and reporting against one currency. However, the application supports a base currency for each entity. You can set the currency for entered values, which are converted to other currencies having defined exchange rates.

About Accounts

Account dimension members specify the information needed from users. Create an account structure that lets budget preparers input data for budget items. You can define calculations in the account structure.

Related Topics

- [Account Types](#)
- [Saved Assumptions](#)
- [Data Type and Exchange Rate Type](#)

Account Types

Account type defines accounts' time balance (how values flow over time) and determines accounts' sign behavior for variance reporting with member formulas.

Examples of Using Account Types

Table 11-2 Using Account Types

Account Type	Purpose
Expense	Cost of doing business
Revenue	Source of income
Asset	Company resource
Liability and Equity	Residual interest or obligation to creditors
Saved assumption	Centralized planning assumptions ensuring consistency across the application

Summary of Account Types

Table 11-3 Summary of Account Types

Account Type	Time Balance	Variance Reporting
Revenue	Flow	Non-Expense
Expense	Flow	Expense
Asset	Balance	Non-Expense
Liability	Balance	Non-Expense
Equity	Balance	Non-Expense
Saved Assumption	User-defined	User-defined

Variance reporting and time balance settings are system-defined; only Saved Assumption is user-defined.

Time Balance Property

Time balance specifies how the application calculates the value of summary time periods.

Table 11-4 Time Balance Properties

Time Balance Property	Description	Example
Flow	Aggregate of all values for a summary time period as a period total.	Jan: 10 Feb: 15 Mar: 20 Q1: 45
First	Beginning value in a summary time period as the period total.	Jan: 10 Feb: 15 Mar: 20 Q1: 10
Balance	Ending value in a summary time period as the period total.	Jan: 10 Feb: 15 Mar: 20 Q1: 20
Average	Average for all the child values in a summary time period as the period total.	Jan: 10 Feb: 15 Mar: 20 Q1: 15
Fill	The value set at the parent is filled into all its descendents. If a child value changes, the default aggregation logic applies up to its parent. Consolidation operators and member formulas overwrite Fill values when the members are recalculated.	Jan: 10; Feb: 10; Mar: 10; Q1: 30
Weighted Average - Actual_Actual	Weighted daily average, based on the actual number of days in a year; accounts for leap year, in which February has 29 days. In the example, the average for Q1 is calculated: (1) Multiply each month's value in Q1 by the number of days in the month, (2) Sum these values, (3) Divide the total by the number of days in Q1. Assuming it's a leap year, the result is calculated: $(10 * 31 + 15 * 29 + 20 * 31) / 91 = 15$ Note that this time balance property is only supported for dimensions bound to a block storage cube. Aggregate storage cubes do not support the Weighted Average - Actual_Actual time balance property.	Jan: 10 Feb: 15 Mar: 20 Q1: 15

Table 11-4 (Cont.) Time Balance Properties

Time Balance Property	Description	Example
Weighted Average - Actual_365	Weighted daily average, based on 365 days in a year, assuming that February has 28 days; doesn't account for leap years. In the example, the average for Q1 is calculated: (1) Multiply each month's value in Q1 by the number of days in the month, (2) Sum these values, (3) Divide the total by the number of days in Q1. Assuming it's not a leap year, the result is calculated: $(10 * 31 + 15 * 28 + 20 * 31) / 90 = 15$ Note that this time balance property is only supported for dimensions bound to a block storage cube. Aggregate storage cubes do not support the Weighted Average - Actual_365 time balance property.	Jan: 10 Feb: 15 Mar: 20 Q1: 15
Custom	Spreading is disabled and the application designer is expected to add customized spreading. For instance, you can feed a value into the period total (Q1) using Groovy rules and it will calculate the summary time periods using the Flow method.	NA
Disable	Spreading is disabled and the summary time period is read-only. Disable prevents data from being entered on non-level zero periods. The Flow method is used to aggregate into the period total (Q1), but it won't spread down to the summary time periods.	NA

 **Note:**

- You can use the Weighted Average - Actual_Actual and Weighted Average - Actual_365 time balance properties only with a standard monthly calendar that rolls up to four quarters.

For information on how the application calculates and spreads data with the different Time Balance settings, see *How Spreading Data Works* in *Working with Planning*.

- For Custom and Disable time balance properties, the application designer needs to be aware of the storage characteristics of the member that they write to, be it aggregate storage or block storage. For example, you can only save to level zero members in aggregate storage and if you try to save to a dynamic calc member, it'll be ignored and overwritten when recalculated. Also note that spreading only happens in the grid prior to save, be it automatic or using a Groovy rule. After the grid is saved, normal Essbase behavior will take over with regard to saving and reading data (that is, normal outline math will apply, member formulas, time balance, and so on).

Account Types and Variance Reporting

An account's variance reporting property determines whether it's treated as an expense when used in member formulas:

- Expense: The actual value is subtracted from the budgeted value to determine the variance

- **Non-Expense:** The budgeted value is subtracted from the actual value to determine the variance

Setting Account Calculations for Zeros and Missing Values

With time balance properties First, Balance, and Average, specify how database calculations treat zeros and missing values with the Skip options.

Table 11-5 Effect of Skip Options When Time Balance is Set to First

Skip Option	Description	Example
None	Zeros and #MISSING values are considered when calculating parent values (the default). In the example, the value of the first child (Jan) is 0, and zeros are considered when calculating the parent value, so Q1 = 0.	Jan: 0 Feb: 20 Mar: 25 Q1: 0
Missing	Excludes #MISSING values when calculating parent values. In the example, the value of the first child (Jan) is #MISSING, and #MISSING values are not considered when calculating parent values, so Q1 = second child (Feb), or 20.	Jan: #MISSING Feb: 20 Mar: 25 Q1: 20
Zeros	Excludes zero values when calculating parent values. In the example, the value of the first child (Jan) is 0, and zero values are not considered when calculating parent values, so Q1 = the second child (Feb), or 20.	Jan: 0 Feb: 20 Mar: 25 Q1: 20
Missing and Zeros	Excludes #MISSING and zero values when calculating parent values. In the example, the value of the first child (Jan) is zero, and the value of the second child (Feb) is missing. Because missing and zero values are not considered when calculating parent values, Q1 = the third child (Mar), or 25.	Jan: 0 Feb: #MISSING Mar: 25 Q1: 25

Saved Assumptions

Use saved assumptions to centralize planning assumptions, identifying key business drivers and ensuring application consistency. You select time balance and variance reporting properties.

- Variance reporting determines the variance between budgeted and actual data, as an expense or non-expense.
- Time balance determines the ending value for summary time periods.

Examples of how time balance and variance reporting properties are used with saved assumption account members:

- Create a saved assumption of an expense type for variance reporting, assuming that the actual amount spent on headcount is less than the amount budgeted. To determine the variance, the application subtracts the actual amount from the budgeted amount.
- Determine the value for office floor space by using the time period's last value.
- Make an assumption about the number of product units sold at the end of the time period. Determine the final value for the summary time period by aggregating the number of units sold across time periods.

Data Type and Exchange Rate Type

Data type and exchange rate type determine how values are stored in account members, and the exchange rates used to calculate values.

Available data types for account members' values:

- Currency: Stores and displays in the default currency.
- Non-currency: Stores and displays as a numeric value.
- Percentage: Stores a numeric value and displays as a percent.
- Date: Displays as a date.
- Text: Displays as text.

In a multiple currency application, for accounts with the Currency data type, available Exchange Rate types (valid for any time period):

- Average: Average exchange rate
- Ending: Ending exchange rate
- Historical: Exchange rate in effect when, for example, earnings for a Retained Earnings account were earned or assets for a Fixed Assets account were purchased.

In a Simplified multiple currency application, for accounts with the Currency data type, available Exchange Rate types (valid for any time period):

- FX Rates - Average
- FX Rates - Ending

Accounts, Entities, Periods, and Cubes

By assigning cubes for Account, Entity, and Period members, you set to which cubes the members' children have access. For example, Total Sales Account may be valid for Revenue and P&L, but Fixed Assets Account may be valid for only Balance Sheet. Not assigning a cube to a member prevents that member's children from accessing that cube.

When moving members, if the new parent is valid for different cubes, members remain valid only for cubes they have in common with the new parent. If the new parent of an account member has another source cube, the member's source cube is set to the first new valid cube of that member.

Entities and Cubes

Typically, entity members prepare different plans. When defining entity members, specify cubes for which they are valid. Because forms are associated with cubes, you can control which entity members can enter data for each cube.

Accounts and Cubes



If accounts are valid for multiple cubes, specify the source cube to determine which cube's database stores the account value for them.

Accessing the Simplified Dimension Editor

To access the Simplified dimension editor:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**.
3. The **Cube** drop-down list defaults to **All**. Click the down arrow to the right of the **Cube** drop-down list to filter the list of dimensions by cube.

4. Click the name of the dimension that you want to view.
5. Select from the following tabs:

-  : Click **Edit Member Properties** to view and edit dimension members. See [Editing Member Properties](#).
-  : Click **Edit Dimension Properties** to view and edit dimension details. See [Editing Dimension Properties](#).

Working in the Edit Member Properties Grid

Work with elements in the **Edit Member Properties** grid interface.

Related Topics

- [Switching to Another Dimension](#)
- [Customizing the Column Layout](#)
- [Context Menu Options](#)
- [Viewing Ancestors](#)
- [Showing Member Usage in an Application](#)
- [Focusing Your Editing](#)
- [Finding Members](#)
- [Moving Members](#)
- [Sorting Members](#)
- [Moving Members to Another Hierarchy](#)
- [Working with Member Formulas](#)
- [Copying Member Names from Microsoft Excel](#)

Switching to Another Dimension

To switch to another dimension while viewing the **Edit Member Properties** grid:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Click the down arrow next to the dimension name at the top of the page.

Note:

The dimension drop-down displays all of the dimensions, regardless of the cube you are currently viewing.

Customizing the Column Layout

Each column in the grid represents a member property (**Member Name**, **Parent Member**, **Default Data Storage**, and so on). The columns that initially display on the grid can be different based on which dimension type you're editing.

You can customize the layout of columns in the **Edit Member Properties** grid by hiding, unhiding, resizing, or reordering columns. You can also display the complete set of properties (all columns) by selecting **Select All** in the **Select Columns** dialog box.

The properties listed in the column selector are not a flat list of properties. Instead, properties are grouped in the column selector according to their functionality. For example, Account-specific properties such as **Account Type**, **Variance Reporting**, and **Time Balance**, are grouped under **Account** in the column selector. When you select **Account** in the column selector, all properties in the group are selected for inclusion in the grid. Then you can clear the checkboxes for any properties that you don't want added to the grid.


To customize the column layout in the **Edit Member Properties** grid:

1. View **Edit Member Properties**.

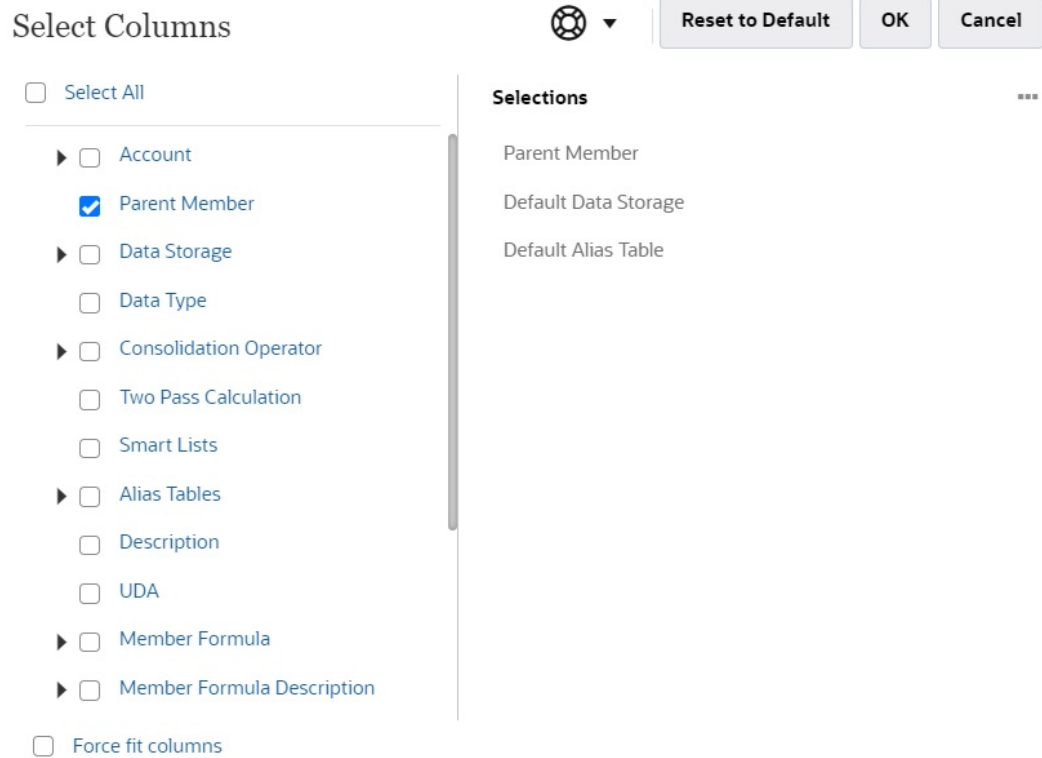
See [Accessing the Simplified Dimension Editor](#).

2. On the grid, right-click any column heading.

 **Tip:**

Alternatively, you can display this dialog box by clicking  or by clicking **Actions**, and then **Select Columns**.



The **Select Columns** dialog box displays.



3. Select or clear the check boxes for the columns (properties) you want to add to or remove from the grid. Select a top-level group such as **Account** or **Data Storage** to select all of the properties grouped under those categories.
 - To display all property columns on the grid, click **Select All**.
 - In the **Selections** pane of the **Select Columns** dialog box, columns appear in the order they are selected, and this is the order in which they will be displayed on the grid. To reorder the columns on the grid, hover over a column in the **Selections** pane, then select the up or down arrows to move the column up or down in the order.

 **Note:**

You can also reorder columns by dragging and dropping them directly on the grid.

- To remove a column from the **Selections** pane, hover over a column and click .
- To remove all columns from the **Selections** pane, click , and then select **Remove All**.
- To view the columns that initially displayed on the grid, click **Reset to Default**.

 **Note:**

After making your selections, the columns you select will be saved for the next session.

4. To change the size of the grid or the columns that are displayed on the grid, select or clear the **Force fit columns** option. Selecting the **Force fit columns** option resizes the columns so that all columns are visible on the grid without scrolling.

Context Menu Options

In the **Edit Member Properties** grid, right-click on a cell in the grid to view the following context menu options:

- **Move** options:
 - **Move Up**: Moves the member up one position
 - **Move Down**: Moves the member down one position
- **Zoom In** options:
 - **Zoom in Next Level**: Displays all members one level below the selected member
 - **Zoom in All Levels**: Displays all descendant members below the selected member
 - **Zoom in Bottom Level**: Displays all descendant members of the selected member that have no children
- **Zoom Out**: Displays the member one level above the selected member
- **Keep Selected**: Displays only the selected row or column on the grid
- **Remove Selected**: Removes the selected row or column from the grid
- **Delete**: Deletes the selected member, its descendants, and associated shared members

 **Note:**

The context menus might differ depending on the dimension you are viewing. For some members, certain commands like **Move** or **Delete** are disabled.


Viewing Ancestors

Ancestors are all the members above the selected member in the dimension hierarchy.

To view the ancestors for the selected member in the Simplified dimension editor grid:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Select a member on the **Edit Member Properties** grid.
3. Click **Actions**, and then select **Show Ancestors**.

 **Tip:**

Alternatively, you can view a member's ancestors by clicking .


Showing Member Usage in an Application

Before performing such operations as deleting members, it's important to understand where in the application the members are used (in which forms, approval units, Auto Predict prediction and insight definitions, insights, exchange rates, and so on) by using **Show Usage**.

To view where members are used in an application:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Select a member on the **Edit Member Properties** grid.
3. Click **Actions**, and then **Show Usage**.





 **Tip:**




Alternatively, you can click  to view where a member is used in the application.

Focusing Your Editing

Use zoom in, zoom out, keep selected, remove selected, and freeze to focus your editing while working in the **Edit Member Properties** grid.

To perform these operations while viewing the **Edit Member Properties** grid:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. To focus your editing on specific members in the grid, select a member, and then click one of the following zoom operations:
 - Zoom in options:
 - : **Zoom in Next level** displays all members one level below the selected member.
 - : **Zoom in All levels** displays all descendant members below the selected member.
 - : **Zoom in Bottom level** displays all descendant members of the selected member that have no children.
 - : **Zoom Out** displays the member one level above the selected member.
3. To focus your editing on specific rows or columns in the grid, select a row or column, and then choose from the following operations:





- : **Keep Selected** displays only the selected row or column on the grid.
- : **Remove Selected** removes the selected row or column from the grid.
- : **Freeze** (for columns only) keeps the selected column and all columns to the left of the selected column stationary so the column or columns can't be scrolled. Only columns to the right of the frozen column can be scrolled. For example, you can freeze the first column that includes the member name so that you can scroll and edit that member's properties and still see the member name. To unfreeze columns, click **Freeze** once again.

 **Tip:**

Alternatively, you can select these operations on the **Actions** menu. You can also view some of these options by right-clicking on a cell in the grid.



Finding Members

To find dimension members in the **Edit Member Properties** grid:

1. View **Edit Member Properties** for a dimension.
See [Accessing the Simplified Dimension Editor](#).
2. For **Search**, select **Name**, **Alias**, or **Both**, then enter the search text (member name, alias, or partial string) for which to search.
3. Select one of the following search options:
 - : **Search Up**
 - : **Search Down**
 - : **Filtered Search** searches for all members that match the search term and returns a list of members. Click  **Clear Filter** to display the unfiltered grid again.

Moving Members

To move members:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Select the member to move.
3. To move the member up one position, click . To move the member down one position, click .

 **Tip:**

Alternatively, you can click **Actions**, then select **Move Up** or **Move Down** to move a member up or down one position in the hierarchy. You can also right-click on a cell in the grid to view the **Move** options.

Sorting Members

You can sort members in ascending or descending order, by children or descendants. Sorting members affects the outline. For example, you can alphabetize a list of child members by sorting in descending order to help users quickly locate members in hierarchies in the **Edit Member Properties** grid.

 **Note:**

You can sort dimensions in Planning Modules except for the following:

- Dense dimensions
- The "Plan Element" dimension in Financials
- The "Project Element" dimension in Projects (regardless of whether you rename it or not)

To sort members using the **Edit Member Properties** grid:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. On the grid, select the member whose children or descendants you want to sort.
3. For **Sort**, select **Children** or **Descendants**.

 **Note:**

- If you do not see the **Sort** options at the top of the page, click **>>**.
- Sorting by children affects only members in the level immediately below the selected member. Sorting by descendants affects all descendants of the selected member.

4. Click  or .

Moving Members to Another Hierarchy

To move members to another hierarchy in the **Edit Member Properties** grid:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).

2. In the **Parent Member** column of the grid, type a new parent name for the member you want to move.
3. Click **Save**.

Working with Member Formulas

You can define or edit member formulas directly in the **Edit Member Properties** grid, in the formula bar, or in the **Member Formula** dialog where you can validate member formulas.


You can define member formulas to combine operators, calculation functions, dimension and member names, and numeric constants to perform calculations on members. Member formulas can also include:

- Operator type, function, value, member name, UDA, and so on allowed in formulas.
- Predefined formula expressions, including Smart List values, that expand into a formula or value upon database refresh.


To define or edit member formulas in the Simplified dimension editor:

1. View **Edit Member Properties**.

See [Accessing the Simplified Dimension Editor](#).


2. In the **Default Formula** column of the grid, select the member for which you want to define or edit a formula. Define or edit the formula for the member using one of the following options:
 - Click within the formula bar above the dimension editor grid, and then enter or edit the formula.
 - Click  next to the formula bar, and then enter or edit the formula.

Note:


- Double-clicking the formula cell used to display a multi-line popup with **OK** or **Cancel**. We've removed the popup, and instead it's a direct edit within the formula cell.
- The formula bar displays when a formula cell is highlighted, and is hidden when you navigate away from the formula cell.
- We recommend you edit formulas using the formula bar or using the script editor that opens when you click .

 **Tip:**

- If you don't see the **Default Formula** column, you'll need to add it to the grid.

Click  to open the **Select Columns** dialog, expand **Member Formula**, select **Default Formula**, and then click **OK**. After selecting it, the **Default Formula** column will be included in the grid for all subsequent sessions.

- To include member names in formulas, keep the focus on the formula cell in the grid. Press Ctrl while clicking the member name you want to include in the formula. The member name will display in the formula bar.

3. **Optional:** To check the validity of a member formula, click  next to the formula bar, and then click **Validate**.
4. Click **Save**.

Copying Member Names from Microsoft Excel

To copy and paste member names from Microsoft Excel:

1. In Excel, highlight the member names in one cell or in a range of cells, and press Ctrl+C to copy the data onto the clipboard.
2. Highlight and select the target cell or cells in the Simplified dimension editor, and then press Ctrl+V.
3. When the Clipboard helper is displayed, press Ctrl+V again. The data is pasted to the Clipboard helper.
4. Click **Paste** to paste the data into the Simplified dimension editor.

Editing Member Properties

Related Topics

- [Accessing Edit Member Properties](#)
- [Adding Members](#)
- [Editing Members](#)
- [Deleting Members](#)
- [Adding Shared Members](#)
- [Assigning Access to Dimension Members](#)


Accessing Edit Member Properties

To access the **Edit Member Properties** tab in the Simplified dimension editor:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**, and then click the name of the dimension for which you want to view member properties.

 **Note:**

The **Cube** drop-down list defaults to **All**. Click the down arrow to the right of the **Cube** drop-down list to filter the list of dimensions by cube.

3. Click the  tab.

4. To edit member properties in the **Edit Member Properties** grid, click within a grid cell to edit text or to view a drop-down menu from which you can choose member properties. You can also drag and drop member property values over to rows and columns to fill in properties that are the same. See the Member Properties table below for property options and descriptions.

See [Working in the Edit Member Properties Grid](#).

 **Note:**

Each column in the **Edit Member Properties** grid represents a member property. The list of properties (columns) that initially displays on the grid can be different based on which dimension type you're editing. You can customize the layout of columns in the grid by hiding, unhiding, or resizing columns. You can also display the complete set of properties (all columns) by selecting **Select All** in the **Select Columns** dialog box.

To customize the column layout in the **Edit Member Properties** grid, see [Customizing the Column Layout](#).

Member names must conform to guidelines listed in [Naming Restrictions](#).

Shared members must be consistent with [Adding Shared Members](#).

Table 11-6 Member Properties

Property	Value
Member Name	A name that is unique across all dimension members
Parent Member	If the member has a parent in the hierarchy, the parent name.
Description	Optional: A description of the member (you can use the same description for multiple members)

 **Note:**

Editing the description of a seeded member is not allowed. Descriptions for all other members added by users can be edited.

Table 11-6 (Cont.) Member Properties

Property	Value
Alias Table	Optional: The alias table which stores the alias name. Enter an alternate name for the member in Alias . See Administering Alias Tables .
For Account members only: Account Type	Select Expense, Revenue, Asset, Liability, Equity, or Saved Assumption . For descriptions, see Account Types .
For Account members only: Variance Reporting	If the account type is Saved Assumption , select Expense or Non-Expense . Designate the saved assumption as a revenue, asset, liability, or equity account.
For Account members only: Time Balance	Select Flow, First, Balance, Average, Fill, Weighted Average - Actual_Actual, or Weighted Average - Actual_365 . For descriptions, see Time Balance Property .
For Account members only: Skip	If the account type is Asset, Equity, or Liability , select None, Missing, Zeros, or Missing and Zeros . For descriptions, see Setting Account Calculations for Zeros and Missing Values .
For Account members only: Exchange Rate Type	Select Average, Ending, or Historical . For descriptions, see Data Type and Exchange Rate Type .
Data Type	Select Currency, Non-currency, Percentage, Date, or Text . For descriptions, see Data Type and Exchange Rate Type .
For Account members only: Distribution	Sets the weekly distribution. Available for leaf Account members if the option was selected when creating the application and the base time period is 12 months.
Hierarchy Type	Available for dimensions bound to an aggregate storage cube. Aggregate storage dimensions are automatically enabled to support multiple hierarchies. The first hierarchy in a multiple hierarchy dimension must be stored. For members with a stored hierarchy type, the only valid cube aggregation options are Addition or Ignore. In a stored hierarchy, the first member must be set to Addition. For members with a dynamic hierarchy type, all cube aggregation options are valid. Stored hierarchy members that are not children of Label Only members must have Addition set as the consolidation operator. Children of Label Only members can be set to Ignore.
Data Storage	The data storage property. Never Share is the default for new custom dimension members (except root members).
Two Pass Calculation	Recalculate values of members based on values of parent members or other members. Available for Account and Entity members with Dynamic Calc or Dynamic Calc and Store properties.
For Entity members only: Base Currency	For Standard multiple currency applications only, select the Entity member's base currency.

Table 11-6 (Cont.) Member Properties

Property	Value
Cube Consol op	<p>Select an aggregation option for each cube:</p> <ul style="list-style-type: none"> • Not used for Cube (member will be invalid for cube) • Addition • Subtraction • Multiplication • Division • Percent • Ignore • Never (member doesn't aggregate, regardless of hierarchy) <p>You can select a source cube only if multiple cubes are valid for the member. Only cubes and aggregation options for which the member's parent is valid are available. If the parent isn't valid for a cube or aggregation option, neither is the child member. Deselecting a cube for an account or entity parent member deselects it for all descendents of that parent. For members with a stored hierarchy type, the only valid aggregation options are Addition or Ignore.</p> <p>You can set usage by cube for members of custom dimensions and the Period dimension, similar to the Account and Entity dimensions.</p> <p>CAUTION! Deselecting a cube for dimension members after data is entered into an application may result in loss of data when an application is refreshed. For account members, data is lost if the deselected cube is the source cube.</p>
For Account members only: Source Cube	Select the source cube for the member. A shared member is a pointer to the base member and isn't stored; this is disabled for shared members. The source cube of a shared Account member matches the source cube of the base member, even though Source Plan field is unavailable because it doesn't apply to shared members.
Smart Lists	Optional: Select a Smart List to associate with the member.
Solve Order	<p>Specifies the order in which formulas are evaluated. Enter a whole number between 0 and 100000. The formulas for members that have a specified solve order are calculated in order from the lowest solve order to the highest. The default is 0.</p> <p>Solve Order is available for aggregate storage cubes and also for block storage cubes that are enabled for Hybrid. Solve Order for block storage cubes is only editable using the Simplified dimension editor.</p>
Enable for Dynamic Children	Enables users to create children for this member by entering a member name in the runtime prompt for a business rule that has been configured with a dynamic parent member.
Number of Possible Dynamic Children	This option is available if Enable for Dynamic Children is selected. Enter the maximum number of dynamically-added members that users can create. The default is 10.

Table 11-6 (Cont.) Member Properties

Property	Value
Access Granted to Member Creator	<p>This option is available if Enable for Dynamic Children is selected. Determines the access that member creators have to dynamic members that they create with a runtime prompt:</p> <ul style="list-style-type: none"> • Inherit: The member creator will inherit the closest parent's access to the newly-created member. • None: The member creator will not be assigned any access to the newly-created member. (A Service Administrator can later assign the member creator access to the members.) • Read: The member creator will be assigned Read access to the newly-created member. • Write: The member creator will be assigned Write access to the newly-created member. <p>If a Service Administrator changes these settings, they affect only future dynamic members; they don't retroactively affect dynamic members.</p>

Adding Members

Members must conform to guidelines listed in [Naming Restrictions](#).

To add shared members, see [Adding Shared Members](#).

To add members in the **Edit Member Properties** grid:

1. View **Edit Member Properties.**

See [Accessing the Simplified Dimension Editor](#).

2. Add members:

- To add a child member, select the parent level member, click **Actions**, and then click **Add Child**.



 **Note:**

Child members inherit the dimension properties of the parent member.

- To add a sibling member, select a member, click **Actions**, and then click **Add Sibling**.
- To add years to the calendar, select the Year dimension, click **Actions**, and then click **Add Years**. Enter the number of years to add, click **Apply**, and then confirm whether to add the years to the end of the calendar. Click **Yes** to add years after the End year. Click **No** to add years before the Start year.
- To add an All Years parent member that includes all members of the Year dimension, select the Year dimension, click **Actions**, and then click **Add "All Years"**.

The All Years parent member enables users to view the accumulated data across multiple years, for example, a project's total cost up to its end date. The All Years member doesn't include the No Year member, if one is defined for the application.

- 3. To set or change member properties, click a cell in the **Edit Member Properties** grid and make updates. See [Editing Members](#).**

4. To undo all changes that were made since the last save, click  .
5. To save your changes, click **Save**.
6. To apply your changes across the application after a save, click  .
7. After creating a dimension member, you typically complete these tasks:
 - Assign access. Click **Actions**, and then click **Assign Permission**.
 - Assign custom attributes. See [Editing Dimension Properties](#).

Editing Members



You can edit members directly in the **Edit Member Properties** grid.

To edit members:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Take an action:
 - To add members, see [Adding Members](#)
 - To navigate to the **Edit Member Properties** grid and to focus your editing on certain members, rows, or columns, see [Working in the Edit Member Properties Grid](#).
 - To modify member properties, click within a cell on the **Edit Member Properties** grid and select an option from the drop-down list. For example, to edit the Account Type for an Account dimension member, click within a cell in the Account Type column. Click the down arrow that appears within the cell, and then select an Account Type option. For descriptions of member properties, see [Editing Member Properties](#).

Note:

To view all property columns in the grid, right-click any heading on the grid, select the **Select All** option in the **Select Columns** dialog box, then click **OK**.

- To delete members, see [Deleting Members](#).
3. To undo all changes that were made since the last save, click  .
 4. To save your changes, click **Save**.
 5. To apply your changes across the application after a save, click  .

Deleting Members

Each data value is identified by a set of dimension member values and a cube. Deleting dimension members or deselecting the cube results in data loss when refreshing an application. Deleting entity members deletes all approval units (including data) associated with them.

Before deleting members, understand where in the application they are used (in which forms, approval units, exchange rates, and so on) by using **Show Usage**. See [Showing Member Usage in an Application](#).

You must delete the entity member throughout the application before deleting it from dimension. For example, if the entity member is used in a form, you must delete it from the form before deleting it from dimensions.

When deleting a large subtree of entities, you can improve performance if you first exclude approval units for the subtree (by excluding the root member) for all scenarios and versions. See [Approvals Process](#).

To delete members:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. In the **Edit Member Properties** grid, select the member to delete.
3. Click **Actions**, and then click **Delete Member**.

 **Note:**

Deleting a base member also deletes its shared members.

4. In the confirmation box, click **Yes**.
5. Update and validate business rules and reports.

Adding Shared Members

Sharing members allow alternate rollup structures within an application. A base member must exist before you can create a shared member. You can create multiple shared members for the base member. A base member must display before its shared members in position from top to bottom.

Shared members are available for Entity, Account, and user-defined custom dimensions. Shared member values can be ignored to avoid double-counting values when you roll up the outline.

Shared members share some property definitions with base members, such as member name, alias name, base currency, and cubes for which members are valid. Shared members must have unique parent members and different rollup aggregation settings. Custom attributes, custom attribute values, and member formulas are not allowed for shared members. Renaming base members renames all shared members.

 **Note:**

Shared members must have the same names as their base member. Also, base and shared member names are case-sensitive.

Shared members can't be moved to another parent member. You must delete shared members and recreate them under different parent members. The base member need not be level zero. You can enter data in shared members, and values are stored with base members.

To add shared members to the **Edit Member Properties** grid:

1. View **Edit Member Properties**.

See [Accessing the Simplified Dimension Editor](#).

2. Add shared members:
 - a. Add a child member with the same name as the base member.
 - b. For **Parent Member** of the new member, type a new parent name.
 - c. For **Default Data Storage** of the new member, select **Shared**.
3. Click **Save**.

Data storage properties for all other cubes will automatically be set to **Shared**.

Assigning Access to Dimension Members

Before you can assign access to members of user-defined custom dimensions, you must select the **Apply Security** check box on the dimension's **Edit Dimension Properties** page. See [Editing Dimension Properties](#).


To assign access to dimension members:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Select the member, click **Actions**, and then click **Assign Permission**.
3. Click **Permissions**.
4. See the following topics to add, edit, or remove permissions:
 - [Adding, Editing, and Removing Access to Members](#)
 - [About Effective Access Permissions to Shared Members](#)

Adding, Editing, and Removing Access to Members

You can specify which users and groups can access the selected member.

To assign, edit, and remove access permissions to members:

1. View **Edit Member Properties**.
See [Accessing the Simplified Dimension Editor](#).
2. Select the member, click **Actions**, and then click **Assign Permission**.
3. Click **Permissions**.
4. To add access, click **Add User/Group**, then click  to select the users and groups to access the selected member.


Click **Users** to display all users; click **Groups** to display all groups.

5. To modify the type of access:
 - a. Select a **Permission** for the displayed users or groups:
 - **Read**
 - **Write**
 - **None**
 - **Display**

For descriptions of the preceding options, see *Accessing Ancestor Members in Ad Hoc Grids*.

- b. **Optional:** Select a relationship.

For example, select **Children** to assign access to the children of the selected member.

6. To remove access, click .
7. Click **OK**.
8. Click **Close**.

About Effective Access Permissions to Shared Members

You can't assign access directly to a shared member. A shared member inherits access permissions from its base member, parent, or ancestor.

The application checks access permissions at each level, first by user, then by group, based on the member's access permissions inheritance relationship. If multiple access permissions exist, the least restrictive access permission is applied (for example, Write access takes precedence over Read access).

Sample Parent and Child Entity Members



Table 11-7 Example of Inherited Access to Shared Members

Case	Access Permission	Effective Access for Base and Shared Member CA	Explanation
Case 1	CA (base) = None iDescendants (West) = Read	Read	CA inherits Read access from its West parent because Read is less restrictive than None.
Case 2	iDescendants (United States) = None iDescendants (West) = Read iDescendants (Sales Region 1) = Write	Write	CA inherits Write access from its Sales Region 1 parent because Write is less restrictive than Read or None.
Case 3	iDescendants (United States) = Write iDescendants (West) = None iDescendants (Sales Region 1) = Read	Write	CA inherits Write access from its United States parent because Write is less restrictive than Read or None.

Editing Dimension Properties

To access the properties of a dimension in the Simplified dimension editor:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**.
3. The **Cube** drop-down list defaults to **All**. Click the down arrow to the right of the **Cube** drop-down list to filter the list of dimensions by cube.
4. Click the name of the dimension that you want to view.



5. Select the **Edit Dimension Properties** tab

Dimension properties must conform to guidelines listed in [Naming Restrictions](#).

Table 11-8 Dimension Properties

Property	Value
Dimension	Enter a name that is unique across all dimensions.
Description	Optional: Enter a description.
Alias Table and Alias	Optional: Select an alias table. Enter an alternate name for the dimension. See Administering Alias Tables .
Cube	Select the cubes for which the dimension is enabled. Clearing this option disables all members of the dimension for the deselected cube.
Two Pass Calculation	Recalculate values of members based on values of parent members or other members. Available for Account and Entity members with Dynamic Calc or Dynamic Calc and Store properties.
Apply Security	Allow security to be set on the dimension members; must be selected before assigning access rights to dimension members. Otherwise, dimensions have no security and users can access members without restriction. See Assigning Access to Dimension Members .
Data Storage	Select a data storage option. The default is Never Share . <ul style="list-style-type: none"> • Store: Stores data values of members. • Dynamic Calc and Store: Calculates data values of members, and stores values. • Dynamic Calc: Calculates data values of members, and disregards the values. • Never Share: Prohibits members in the same dimension from sharing data values. • Label Only: Has no data associated with the member. • Shared: Allows members in the same dimension to share data values. See Storage Options .
Display Option	Set application default display options for the Member Selection dialog box. Select Member Name or Alias to display members or aliases. Member Name:Alias displays members on the left and aliases on the right. Alias:Member Name displays aliases on the left and members on the right.

Table 11-8 (Cont.) Dimension Properties

Property	Value
Hierarchy Type	Available for dimensions bound to an aggregate storage cube. Aggregate storage dimensions are automatically enabled to support multiple hierarchies. The first hierarchy in a multiple hierarchy dimension must be Stored . For members with a Stored hierarchy type, the only valid cube aggregation options are Addition or Ignore . In a stored hierarchy, the first member must be set to Addition . For members with a Dynamic hierarchy type, all cube aggregation options are valid. Stored hierarchy members that are not children of Label Only members must have Addition set as the consolidation operator. Children of Label Only members can be set to Ignore .
Custom Attributes	Click to Create or Synchronize custom attributes for a dimension.

Working with Attributes

Attributes describe characteristics of data, such as the size and color of products. You can use attributes to group and analyze members of dimensions based on their characteristics. For example, you can analyze product profitability based on size or packaging, and you can make more effective conclusions by incorporating market attributes, such as the population size of each market region, into your analysis.

You can assign attributes to sparse dimensions only. You can't assign attributes to label-only members. Attribute dimensions don't have aggregation properties because parents are dynamically calculated.

The Account dimension is usually defined as dense, so you can't assign attributes to it unless it's changed to sparse for all cubes. If you change a dimension from sparse to dense, all attributes and attribute values for that dimension are automatically deleted.

Attributes can have data types of text, date, Boolean, and numeric, as described in [Understanding Attribute Data Types](#).


Attribute names must conform to guidelines listed in [Naming Restrictions](#).

To create or edit attributes in the Simplified dimension editor:

1. From the Home page, click **Application**, click **Overview**, and then click **Dimensions**.
2. The **Cube** drop-down list defaults to **All**. Click the down arrow to the right of the **Cube** drop-down list to filter the list of dimensions by cube, and to see which cubes are marked as **Dense**.
3. Select a sparse dimension for the attribute.

Note:


Only sparse dimensions can contain attributes.
See [About Sparse and Dense Dimensions](#).

4. Select the **Edit Dimension Properties** tab .
5. Select options:
 - To create an attribute, next to **Custom Attributes**, click **Create**. Type an attribute name, and select a data type: **Text**, **Date**, **Boolean**, or **Numeric**.

 **Note:**

- You can't modify the type after the attribute is created.
- Before working with date attributes, you must select the **Attribute Dimension Date Format** in **Application Settings** and save it.

See [Understanding Attribute Data Types](#).

- To modify attributes, under **Custom Attributes**, click  next to the attribute you want to modify, select **Edit**, and then update the attribute name.
6. Click **Close**.
When you click **Close**, the hierarchy is validated and an error displays if issues are detected. For example, date attribute values must be entered in the correct format, and numeric and date attribute dimensions must have at least one attribute value defined.
 7. Update and validate business rules and reports.

 **Tip:**

Instead of explicitly filtering by an attribute (like Red, for instance), you can create a user variable for the attribute dimension, and then use the user variable as the filter. Then you can enable the user variable as a dynamic user variable which would allow users to change the value of the filter at runtime. This is a useful technique that allows for dynamic filtering.

See [Managing User Variables](#).

Deleting Attributes

When you delete an attribute, all attribute values associated with the attribute are also deleted. Attribute values are removed from members to which they had been assigned, and the attribute is removed from dimensions to which it was assigned.

To delete attributes:

1. From the Home page, click **Application**, click **Overview**, and then click **Dimensions**.
2. Click the name of the dimension with the attribute you want to delete, and then click the **Edit Dimension Properties** tab.

3. Under **Custom Attributes**, click
...
next to the attribute you want to edit, and then select **Delete**.
4. Click **Yes**.
5. Update and validate business rules and reports.

Working with UDAs

You can use user-defined attributes (UDAs), descriptive words or phrases, within calc scripts, member formulas, reports, and forms. UDAs return lists of members associated with the UDA. For example:

- For a Product dimension with several product members, you can create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy. Then you can base certain calculations on the designation New Products.
- For the budget review process, rather than creating a data validation rule for each owner in a product line (some product lines can have hundreds of owners), you can create a UDA containing the user names that apply to members using the approval unit hierarchy. Then in the data validation rule, you can enter a lookup function which will return the user names stored in the UDA for the current member. For example, create a UDA for each user in the promotional path and assign a prefix to the UDA name (for example, ProdMgr:Kim).
- When designing forms, you can use a UDA to select members for forms based on a common attribute. When you create forms with UDAs, any members that are assigned to the UDA are dynamically added to the form. For example, if you create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy, the form will automatically display the new products at runtime. When selected in the form designer, a UDA is preceded by UDA; for example, UDA(New Products).
- You can use the HSP_UDF UDA to prevent a formula from being overwritten when the application is refreshed. You must log on to each database associated with the business process and create the member formula with a UDA. The syntax for this UDA is: (UDAs : HSP_UDF).
- If you use the @XREF function to look up a data value in another database to calculate a value from the current database, you can add the HSP_NOLINK UDA to members to prevent the @XREF function from being created on all cubes that are not the source cube selected for that member.

UDAs are specific to dimensions. For example, creating a UDA for an Account member makes it available for non-shared Account members. Deleting it removes it for all Account members. To make UDAs available for multiple dimensions, create the same UDA for multiple dimensions. For example, create a UDA named New for Account and Entity dimensions to make the UDA named New available for Account and Entity members.

To work with UDAs in the **Edit Member Properties** grid:

1. From the Home page, click **Application**, click **Overview**, and then click **Dimensions**.
2. Click on the name of the dimension for whose members to associate the UDA.
3. Select the **Edit Member Properties** tab.
4. On the dimension grid, right-click any column heading, select **UDA**, and then click **OK** to make the UDA column visible in the grid.
5. Locate the member to add the UDA, and then scroll to the UDA column.
6. Click in the UDA cell to display the **UDA** management dialog.

7. Select a task:

- To create a UDA, click



, enter a name, and then click **Save**.

 **Note:**

Use no more than 60 characters when naming UDAs.

If creating a UDA for approvals, assign a prefix to the beginning of the name (for example, *ProdMgr:Name*). A prefix indicates that the UDA contains a user name and enables the data validation rule to look up the user. Use the same prefix for all approvals UDAs.

- To modify a UDA, select the UDA, click



, change the name, and then click **Save**.

- To delete a UDA, select the UDA, click



, and then confirm deletion.

 **Note:**

Deleting the UDA removes it for the whole dimension. If you delete UDAs, you must update all member formulas, calc scripts, and reports that reference them.

- To clear UDA selections, click



8. To add or remove UDAs for the member, use the arrows to move UDAs to and from the **Selected UDA** panel.
9. Click **OK**.

Working with Attribute Values

Attribute values provide users with another way to select dimension members when using forms. Data values for attributes are dynamically calculated but not stored.

You can define attribute values for sparse dimensions, which are typically the Entity and user-defined custom dimensions. After you define an attribute value for a dimension, you can assign it to members of that dimension.

Creating Attribute Values

To create attribute values:

1. On the Home page, click **Application**, and then click **Overview**.

2. Click the **Dimensions** tab.
3. For **Cube**, select **All**.
4. Select an attribute dimension.

 **Note:**

Attribute dimensions are listed at the end of the dimensions listing and at the bottom of the dimension drop-down.

5. In **Edit Member Properties**, add members:
 - To add a child member, select the parent level member, click **Actions**, and then click **Add Child**.

 **Note:**

Child members inherit the dimension properties of the parent member.

- To add a sibling member, select a member, click **Actions**, and then click **Add Sibling**.
6. To set or change member properties, click a cell in the **Edit Member Properties** grid and make updates. See [Editing Member Properties](#).
 7. To save your changes, click **Save**.

Assigning Attribute Values to Base Dimensions

When an attribute dimension is associated with a base dimension, it displays in the Simplified Dimension Editor in the same way as a regular dimension. To view attribute dimensions in the listing, select **All** in the **Cube** drop-down list on the main dimension page. Then you can select the attribute dimension to add values to the grid.

To assign attribute values to base dimensions:

1. Open the **Edit Member Properties** page for the base dimension and find the column with the name of the attribute dimension.
2. Click within the grid for a specific member to display a drop-down list with attribute values, and then select an attribute value from the list.
3. Click **Save** on the **Edit Member Properties** page to assign the value to the base member.

Setting Up Scenarios and Specifying Versions

Related Topics

- [Setting Up Scenarios](#)
- [Specifying Versions](#)

Setting Up Scenarios

Each scenario/version combination contains data for accounts and other dimensions of each entity. After users enter data for an entity for a scenario and version, they can submit or promote the data for the entity to other users for review and approval.

- [About Scenarios](#)
- [Creating, Editing, and Deleting Scenarios](#)
- [Copying Scenarios](#)

About Scenarios

Use scenarios to:

- Apply different planning methods
- Create forecasts
- Enter data into scenarios
- Associate scenarios with different time periods or exchange rates
- Assign user access rights by scenario
- Report on scenarios
- Compare and analyze scenarios

Time Periods

Assign each scenario a range of years and time periods, and specify the Beginning Balance time period. When users access forms, they can enter into that scenario only years and periods within the range. Years and periods outside of the range display as read-only. You can modify the time range.

Exchange Rate Table



If a Standard multicurrency application converts currencies, assign an exchange rate table to the scenario. By assigning different exchange rate tables to scenarios, you can model the effects of currency rate assumptions.

Access Permissions

Specify access permissions to Scenario dimension members for groups or users to determine who can view or modify data. A user or group can have only one of these access permissions: Read, Write, or None. Access permissions for a user can be combined based on groups to which the user belongs.

Creating, Editing, and Deleting Scenarios

To create, edit, or delete scenarios:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**, click the **Scenario** dimension, and then click the **Edit Member Properties** tab.
3. Choose an action:
 - To create a scenario, click  , and then go to step 4.
 - To delete a scenario, select the scenario to delete, then click  , and then confirm the deletion.


 **Note:**

When you delete scenarios, all approval units that use the scenario (including data) are deleted. You can't delete scenarios used in approval units that are started, or assigned to an axis on a form. You must first remove references to scenarios from forms and assign different scenarios.

- To edit a scenario, click within the grid cells in the **Edit Member Properties** grid to edit text or to view a drop-down menu from which you can choose member properties. Go to step 4.

 **Note:**

Each column in the grid represents a member property. The columns that initially display on the grid will differ based on which dimension type you're editing. You can customize the layout of columns in the grid by hiding, unhiding, or resizing columns.

To display the complete set of properties (all columns) on the grid, click , select **Select All**, and then click **OK**.

See [Working in the Edit Member Properties Grid](#).

4. In the **Member Name** column, enter a name for the scenario.
5. In the **Start Yr.**, **End Yr.**, **Start Period**, and **End Period** columns, define the time periods to associate with the scenario.
6. You can also perform these optional steps:
 - In the **Description** column, enter a description for the scenario.
 - To update the alias, select one of the **Alias Table** columns (choose default or a language) to associate with the scenario, and enter an alias name.
 - In the **Beg.Bal. as Time Period** column, specify whether to include the BegBalance time period in this scenario for currency conversion.
 - In the **Exchange Rate Table**, select an exchange rate table to associate with the scenario.

 **Note:**


If an application uses multiple currencies, associate a scenario with an exchange rate table to enable currency conversions.

- In the **Enabled for Approvals** column, specify whether to include this scenario in approvals.
7. Click **Save**.

Copying Scenarios

Only scenario properties are copied. Data values and access rights associated with the original scenario are not copied to the new scenario.


To copy scenarios:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**, click the **Scenario** dimension, and then click the **Edit Member Properties** tab.
3. In the **Edit Member Properties** grid, select the scenario to copy.
4. Click .
The duplicate scenario is added to the grid and **_copy** is appended after the member name.
5. In the **Member Name** column, enter a new name for the duplicate scenario.
6. In the **Start Yr.**, **End Yr.**, **Start Period**, and **End Period** columns, define the time periods to associate with the scenario.
7. You can also perform these optional steps:
 - In the **Description** column, enter a description for the scenario.
 - To update the alias, select one of the **Alias Table** columns (choose default or a language) to associate with the scenario, and enter an alias name.
 - In the **Beg.Bal. as Time Period** column, specify whether to include the BegBalance time period in this scenario for currency conversion.
 - In the **Enabled for Approvals** column, specify whether to include this scenario in approvals.
 - In the **Exchange Rate Table**, select an exchange rate table to associate with the scenario.

Note:

If an application uses multiple currencies, associate a scenario with an exchange rate table to enable currency conversions.

Tip:

To display the **Beg.Bal. as Time Period**, **Enabled for Approvals**, and **Exchange Rate Table** columns in the grid, you'll need to select them in the **Select Columns** dialog. To do so, click , expand **Scenario**, select **Beg.Bal. as Time Period**, **Enabled for Approvals**, and **Exchange Rate Table**, and then click **OK**.

8. Click **Save**.

Specifying Versions

Use versions to group data used by an application.

- [About Versions](#)
- [Target and Bottom Up Versions](#)
- [Creating, Editing, and Deleting Versions](#)
- [Viewing Version Types](#)

About Versions

Use the Scenario and Version dimensions to create plans to be reviewed and approved. Each scenario/version combination contains data for accounts and other dimensions of each entity. After users enter data for an entity for a scenario and version, they can submit or promote the data for the entity to other users for review and approval. Use versions to:

- Allow multiple iterations of a plan
- Model possible outcomes based on different assumptions
- Manage dissemination of plan data
- Facilitate target settings

Target and Bottom Up Versions



You can create target and bottom up versions. With bottom up versions, you enter data into bottom level members; parent level members are display-only and don't permit data entry. Parent member values are aggregated from bottom level members.

For target versions, you can enter data for members at any level in the hierarchy. You can use business rules to distribute values from parent members to their descendants. Use target versions to set high-level targets for your plan. Users working with bottom up versions can reference these targets when they enter plan data.

Target versions use top-down budgeting. Manage Approvals Tasks are not allowed, and children of target members must be blank (for example, #MISSING) to enable data input at the top level. Target members must be set to Store (Dynamic Calc overrides data input with sum of children).

Creating, Editing, and Deleting Versions

To create, edit, or delete versions:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**, click the **Version** dimension, and then click the **Edit Member Properties** tab.
3. Choose an action:
 - To create a version, click  , and then go to step 4.
 - To delete a version, select the version to delete, then click  , and then confirm the deletion.


 **Note:**

You can't delete versions that are used in approval units that are started or are assigned to axes on forms. You must remove references to versions from forms and assign another version to axes. At least one version must remain in the application.

- To edit a version, click within the grid cells in the **Edit Member Properties** grid to change the version name and access rights. Go to step 4.

 **Note:**

Each column in the grid represents a member property. The columns that initially display on the grid will differ based on which dimension type you're editing. You can customize the layout of columns in the grid by hiding, unhiding, or resizing columns.

To display the complete set of properties (all columns) on the grid, click , select **Select All**, and then click **OK**.

See [Working in the Edit Member Properties Grid](#).

4. In the **Member Name** column, enter a name for the version.
5. In the **Type** column, select the type of version to display for the application:
 - **Standard Target:** Values are entered from the parent level down
 - **Standard Bottom Up:** Values are entered at the lowest member level and aggregated upward
6. You can also perform these optional steps:
 - In the **Description** column, enter a description for the scenario.
 - To update the alias, select one of the **Alias Table** columns (choose default or a language) to associate with the version, and enter an alias name.
 - In the **Beg.Bal. as Time Period** column, specify whether to include the BegBalance time period in this scenario for currency conversion.
 - In the **Enabled for Approvals** column, specify whether to include this version in approvals.

 **Note:**

This option isn't available for target versions.

7. Click **Save**.
8. Update and validate business rules and reports.

Viewing Version Types

To view version types:

1. From the Home page, click **Application**, and then click **Overview**.
2. Click **Dimensions**, click the **Version** dimension, and then click the **Edit Member Properties** tab.
3. In the **Edit Member Properties** grid, the **Type** column displays these version types:
 - **Standard Target**: Values are entered from the parent level down.
 - **Standard Bottom Up**: Values are entered at the lowest member level and aggregated up.

12

Administering Tasks with Task Manager

Task Manager provides centralized monitoring of all tasks and provides a visible, automated, repeatable system of record for running a business process.

Related Topics

- [Setting Up Task Manager](#)
- [Managing Task Types](#)
- [Managing Task Templates](#)
- [Managing Tasks](#)
- [Managing Schedules](#)
- [Managing Task Manager Integrations](#)
- [Managing Alert Types for Task Manager](#)
- [Using Task Manager Reports](#)
- [Working with Views and Filters](#)
- [Managing Operational Dashboards](#)

Setting Up Task Manager

Related Topics

- [Task Manager Terms](#)
- [Task Manager Overview](#)
- [Sample Task Flows](#)
- [Managing Task Manager Views, Lists, and Filters](#)
- [Managing Task Manager System Settings](#)
- [Managing Task Manager Attributes](#)

Task Manager Terms

Tasks

A unit of action in the application, for example, data entry or data consolidation. Power users define the tasks that comprise a business process. Users can read task instructions, answer questions, submit, reassign, approve, and reject tasks, and can access tasks from email notifications or by logging on to the application.

Integrations

A definition of a service provided by an application.

Task Types

Identify and categorize commonly performed tasks; for example, Data Entry, or G/L Extract. The Task Type enables you to set default information, such as settings that need to be input by the user, and questions or instructions that are shared by all tasks of that type. Task Types are often based on Integration Types.

Execution Types

End-users, System-Automated Task, Event Monitoring Task

Templates

Business processes that are repeatable. Administrators can create templates for different types of business processes, such as monthly or quarterly.

Schedules

Defines the chronologically ordered set of tasks that must be executed for a specific business process, and is the alignment of a template's generic business process days, to calendar dates.

Dashboard

This view presents a portal-style interface with views into schedules and task lists, and high-level summaries into which you can drill down for greater detail.

Alerts

Notifications from users on issues that they encounter during the process, such as hardware or software issues. Users create alerts identifying a problem and assign them to be resolved.

Task Manager Overview

Task Manager helps you define, execute, and report on the interdependent activities of a business process. It provides centralized monitoring of all tasks and provides a visible, automated, repeatable system of record for running a business process.

**Note:**

During application creation, you were presented with two task flow type options: **Task List** and **EPM Task Manager**. **EPM Task Manager** is the default option for new applications. For information about administering Task Lists, see *Administering Task Lists*.

You can:

- Define the tasks and schedule to ensure the most efficient task flow
- Automate the business process, track status, and provide notifications and alerts
- Notify users by email for delinquencies, due dates, status changes
- Monitor business process status from a dashboard
- Act quickly to fix errors and delays
- Analyze the effectiveness of the business process

A business process requires these steps:

1. The administrator sets up users. See [Managing Users and Roles](#) in the *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* guide.
2. The administrator completes the required setup procedures:

- Set up organizational units. See [Managing Task Manager Organizational Units](#).
 - Set up global integration tokens. See [Managing Global Integration Tokens](#).
 - Set up holiday rules. See [Managing Holiday Rules for Tasks](#).
 - Set up attachment size and other system settings. See [Setting Task Manager Governors](#).
 - Enable email notifications. See Setting Up Email for Notifications in *Working with Planning*.
3. The administrator reviews the tasks required for a business process and sets up Task Types to ensure consistency across tasks and to leverage predefined product integrations. See [Managing Task Types](#).
 4. Because many business processes are repeatable, the administrator saves a set of tasks as a template to use for future periods. See [Managing Task Templates](#).

For example, an administrator can set up a monthly or quarterly business process once and then use it for all months or quarters. Tasks are defined with task predecessors, Assignees, and Approvers.
 5. To initiate a business process, administrators generate a schedule (a chronological set of tasks) by selecting a template and assigning calendar dates. The generic tasks in the template are applied to calendar dates.

See [Managing Schedules](#).
 6. To begin a business process, the administrator changes the schedule status from Pending to Open.
 7. The administrator can also modify and monitor the schedule as needed.
 8. During the business process, users receive email notifications of assigned tasks and can click links in the email for direct access to assigned tasks.
 9. Alternatively, users can log on to review and access assigned tasks in different types of views.
 10. When users complete tasks, the tasks are sent to approvers and can be viewed by other users.
 11. Users can create alerts for issues, such as hardware or software issues, that they encounter. Alerts are forwarded to Assignees and Approvers for resolution.

Watch this overview video to learn more.



[Overview Video](#)

Sample Task Flows

Scenario 1: Power User

The Power User sets up a template and tasks for an upcoming business process.

- The Power User logs on and opens the Manage Templates page.
- The Power User selects the template for the business process.
- The Power User selects the calendar dates on which to line up the template tasks, and creates a schedule.
- The Power User then adds a task to the template.

- The Power User opens the schedule, which begins the process.

Scenario 2: Power User

The Power User monitors the status of activities through the Dashboard.

- The Power User logs on and checks the status of activities through Day 3.
- The user drills down to see the details of incomplete tasks.
- The Power User reviews open tasks for comments or attachments provided by assigned users.

Scenario 3: Approver

A user assigned as an Approver reviews a current task to determine whether it can be approved.

- The assigned Approver receives an email notification of an outstanding task.
- From the email, the Approver selects the link for the task.
- The Task Actions page is launched outlining the process.
- The Approver reviews the document that the user submitted when completing the task to ensure completeness.
- The Approver enters additional comments and approves the submission.
- If another level of approval is required, the task is forwarded to the next approver. If the task was the last requiring approval, then the task completes, and the system runs the next task if it is ready.
- The Approver can reject a task instead of approving it, and the task is reassigned to the Assignee.

Scenario 4: User

A user logs on to the application and reviews and completes an assigned task.

- The user logs on and reviews their tasks.
- The user clicks the link for an assigned task.
- The task page is launched with instructions for the task, and a reference document.
- The user reviews the instructions and the reference document, processes the updates, enters a comment about the task, and submits it for approval.
- The system automatically updates the task status and sends a notification to the assigned approver.

Scenario 5: User

A user responds to an email notification of a task to load data, clicks a link in the email, and then completes the task.

- The user receives an email notification of an outstanding task.
- From the email, the user selects the link for the page where the required process is documented.
- The user reviews the instructions for the task and opens the task.
- The user loads data into the system.
- The user enters a comment about the task and submits it for approval.

Managing Task Manager Views, Lists, and Filters

Related Topics:

- [Viewing Task Manager Lists](#)
- [Working with Views](#)
- [Working with Filters](#)

Viewing Task Manager Lists

The Task Manager list provides a central place to manage all your tasks. It displays a list of tasks and their status for a selected Year, Period and Schedule.

If you are an Administrator, you can see all the available tasks in the system, and the user who is working on them.

If you are a user other than an Administrator, you can see all active tasks for your role that need your attention.

To view tasks:

1. On the Home page, click **Tasks**.
2. Click **Tasks** on the left navigation.
3. Select a **Year**, **Period**, and **Schedule**.
4. **Optional:** To search for a task, in the **Search** field, enter any text or numeric for which to search the task list.
5. **Optional:** To filter the list of tasks, click **Add a Filter** in the filter bar and specify filter criteria.

You can use the Ever Been Late attribute, which automatically updates to indicate if the task has ever missed a scheduled due date within its workflow. This new attribute allows you to easily identify any task, which missed one or more of its scheduled due dates. Even if the task is currently not late but if the Assignee or any Approver has ever been late with their workflow, then the Ever Been Late attribute indicates the task as missed the scheduled due date.

Sample Task List

Name	Status (Icon)	Start Date (Assigned)	End Date (Assigned)	Assignee	Responsible	Approver 1	Predecessors	Assignee End Date	Task ID	Task Type	Appr (Act.)
01 Consolidation Process Kick Off	🟢	Dec 24, 2021 8:30 AM	Dec 26, 2021 4:30 PM	Kerry Lane		Casey Brown		Dec 26, 2021 12:00 PM CET	01_Admin	Parent Task	
005 - Review New Closing Procedures	🟢	Jan 1, 2022 8:30 AM	Jan 2, 2022 4:30 PM	Kerry Lane		Casey Brown		Jan 2, 2022 12:00 PM CET	005_Admin	Basic Task	Jan 21
010 - Review New Accounts	🟢	Jan 2, 2022 8:30 AM	Jan 2, 2022 4:30 PM	Kerry Lane		Casey Brown		Jan 2, 2022 12:00 PM CET	010_Admin	Manage Dimensions	Jan 21
015 - Review Currency Rates	🟢	Jan 2, 2022 8:30 AM	Jan 3, 2022 4:30 PM	Kerry Lane		Casey Brown		Jan 3, 2022 12:00 PM CET	015_Conseal	Enter Form Data	Jan 21
020 - Load Admin Data	🟢	Jan 6, 2022 8:30 AM	Jan 7, 2022 4:30 PM	Kerry Lane	Kerry Lane	Casey Brown	010 - Review New Acco...	Jan 7, 2022 12:00 PM CET	020_Conseal	Import Data	
025 - Load OMR Sales Data	🟢	Jan 7, 2022 4:30 PM	Jan 8, 2022 4:30 PM	Robert Jackman	Robert Jackman	Casey Brown		Jan 8, 2022 11:00 AM GMT	025_Conseal	Import Data	
030 - Load Nk Sales Data	🟢	Jan 7, 2022 8:30 AM	Jan 8, 2022 4:30 PM	Kerry Lane		Casey Brown	020 - Load Admin Data	Jan 8, 2022 5:00 AM CST	030_Conseal	Import Data	
035 - Load Divisional GL Balance Sheet Da	🟢	Jan 8, 2022 8:30 AM	Jan 8, 2022 11:30 AM	Kerry Lane		Casey Brown	010 - Review New Acco...	Jan 7, 2022 11:00 AM MST	035_DataLead	Import Data	
040 - Perform High Risk Reconciliations	🟢	Jan 8, 2022 11:30 AM	Jan 13, 2022 5:30 PM	Kerry Lane	Kerry Lane	Casey Brown	005 - Review New Cste...	Jan 13, 2022 5:00 AM MST	040_AcctRec	View Reconciliations	
045 - Reconciliation Reports	🟢	Jan 8, 2022 11:30 AM	Jan 13, 2022 5:30 PM	Kerry Lane	Kerry Lane	Casey Brown	005 - Review New Cste...	Jan 13, 2022 5:00 AM MST	045_AcctRecR	Reports	
02 Flash Financials (Soft Close)	🟢								02_Conseal	Parent Task	
060 - Perform Preliminary Consolidation	🟢	Jan 9, 2022 8:30 AM	Jan 9, 2022 8:30 AM	Kerry Lane		Casey Brown	015 - Review Currency ...	Jan 9, 2022 5:00 AM CET	060_Conseal	Enter Form Data	
065 - Prepare Intercompany Adjustments	🟢	Jan 9, 2022 8:30 AM	Jan 10, 2022 4:30 PM	Kerry Lane	Kerry Lane	Casey Brown		Jan 10, 2022 12:00 PM CET	065_Conseal	Manage Journals	
070 - Prepare Sales Adjustments	🟢	Jan 9, 2022 8:30 AM	Jan 16, 2022 4:30 PM	Robert Jackman	Robert Jackman	Casey Brown		Jan 10, 2022 11:00 AM GMT	070_Conseal	Manage Journals	
075 - Review Forecast Data	🟢	Jan 9, 2022 8:30 AM	Jan 9, 2022 4:30 PM	Kerry Lane	Kerry Lane	Casey Brown		Jan 9, 2022 12:00 PM CET	075_Forecast	Enter Form Data	

Column Definitions for Task Manager

This section provides the column definitions for the following Task Manager objects:

- [Task Manager – Templates](#)
- [Task Manager - Template Tasks](#)
- [Task Manager – Schedules](#)
- [Task Manager – Task Types](#)
- [Task Manager – Integrations](#)
- [Task Manager – Alert Types](#)
- [Task Manager – Filters](#)
- [Task Manager – Views](#)
- [Task Manager – Attributes](#)
- [Task Manager – Currencies](#)
- [Task Manager – Schedule Tasks](#)

Task Manager – Templates

This section provides the definitions for the Task Manager templates columns.

Table 12-1 Column Definitions - Task Manager Templates

Column Name	Description
Created By	Name of the user who created the template
Created On	Date and time when the template was created
Description	Description of the template
Embedded In	A list of templates that the current template is embedded in
Embedded Only	Template is only to be used as an embedded template and isn't allowed to be deployed. This prevents supporting templates from being deployed by mistake.
Embedded Templates	A list of templates that are embedded in the current template
Last Schedule	Last schedule created from each template
Last Updated By	Name of the user who last updated the template
Last Updated On	Date and time when the template was last updated
Name	Name of the template
Number of Days After Day 0	Number of days a template tracks after day zero. Days after Day Zero are represented as Day 3, Day 4, and so on.
Number of Days Before Day 0	number of days a template tracks before day zero. Days before Day Zero are represented as Day-5, Day-4, and so on.
Organizational Unit	Assigned organizational unit
Owner	Name of the template owner, which must be a Service Administrator or Power User. The template owner is also the default owner of all tasks in the template unless overridden at the task level.
Schedules	Total number of schedules created from each template

Task Manager - Template Tasks

This section provides the definitions for the Task Manager template task columns.

Table 12-2 Column Definitions - Task Manager Template Tasks

Column Name	Description
Active	Indicates the status of the task template.
Approver 1-10	Assigned approver level
Approver 1-10 (Backup)	Assigned approver (backup)
Approver 1-10 (Primary)	Primary approver
Approver 1-10 End Date (Assigned)	Assigned end date for the approver
Approver 1-10 End Date (Assigned, Local)	The assigned End Date of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Scheduled End Date	The scheduled End Date of the task
Approver 1-10 Scheduled End Date (Local)	The scheduled End Date of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Scheduled Start Date	The scheduled Start Date of the task
Approver 1-10 Scheduled Start Date (Local)	The scheduled Start Date of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Start Date	The assigned Start Date of the task
Approver 1-10 Start Date (Local)	The assigned Start Date of the task, in the local time zone of the org unit (if assigned an org unit)
Approvers (Count)	Total count of assigned approvers
Assignee	User who can work on the task
Assignee (Backup)	Backup user who can work on the task
Assignee (Primary)	Primary user who can work on the task
Assignee End Date	End date for the assigned user
Assignee End Date (Local)	The assigned End Date of the task, in the local time zone of the org unit (if assigned an org unit)
Created By	Name of the user who created the template task
Created On	Date and time when the template task was created
Description	Description of the template task
Execution Type	The execution type such as End User, System Automated, or Event Monitoring
Instructions	Set of instructions for completing the task
Integration	The execution type, End User, System Automated or Event Monitoring
Last Updated By	Name of the user who last updated the template task
Last Updated On	Date and time when the template task was last updated
Organizational Unit	Assigned organizational unit
Owner	Name of the template task owner, which must be a Service Administrator or Power User. The template task owner is also the default owner of all tasks in the template unless overridden at the task level.
Parent	Task ID of the parent task
Predecessors	Predecessor for the current task. It can be from another template.

Table 12-2 (Cont.) Column Definitions - Task Manager Template Tasks

Column Name	Description
Priority	Priority of the task
References (Count)	Count of references added for the template task (URL and content server references).
Rules (Count)	Total count of rules directly on the enterprise journal
Run As	Run the task as the user. Only applicable for system-automated tasks.
Run As Authorized	User who can authorize this task. If the Run As user is the user who also created the task, then the user can authorize the task, without being prompted to re-enter their password.
Start Task Early	Indicates whether the assignee is allowed to open a pending task prior to the scheduled start time
Successors	Successor for the current task
Task ID	Unique identifier for the task
Task Type	Type of the task
Template	Template associated with the task

Task Manager – Schedules

This section provides the definitions for the Task Manager Schedules columns.

Table 12-3 Column Definitions - Task Manager – Schedules

Column Name	Description
Created By	Name of the user who created the schedule
Created On	Date and time when the schedule was created
Date Zero Date	Date to assign as day zero
Description	Description of the schedule
End Date	Effective end date for the schedule
Last Updated By	Name of the user who last updated the schedule
Last Updated On	Date and time when the schedule was last updated
Name	Name of the schedule
Organizational Unit	Organizational unit associated with the schedule
Owner	Name of the schedule owner, which must be a Service Administrator or Power User.
Period	Period for the schedule
Start Date	Effective start date for the schedule
Status	Status of the schedule
Tasks	Tasks associated with the schedule
Year	Year when the schedule was created

Task Manager – Task Types

This section provides the definitions for the Task Manager Task Types columns.

Table 12-4 Column Definitions - Task Manager – Task Types

Column Name	Description
Created By	Name of the user who created the task type
Created On	Date and time when the task type was created
Description	Description of the task type
Execution Type	Type of execution associated with the task type
Integration	Integration associated with the task type
Last Updated By	Name of the user who last updated the task type
Last Updated On	Date and time when the task type was last updated
Name	Name of the task type
Task Type ID	Unique identifier of the task type

Task Manager – Integrations

This section provides the definitions for the Task Manager Integrations columns.

Table 12-5 Column Definitions - Task Manager – Integrations

Column Name	Description
Connection	Application to which the task belongs
Created By	Name of the user who created the integration
Created On	Date and time when the integration was created
Description	Description of the integration
Execution Type	The execution type for the integration
Integration Cloud Deployment	Associated integration cloud deployment for the integration
Last Updated By	Name of the user who last updated the integration
Last Updated On	Date and time when the integration was last updated
Name	Name of the integration

Task Manager – Alert Types

This section provides the definitions for the Task Manager Alert Types columns.

Table 12-6 Column Definitions - Task Manager – Alert Types

Column Name	Description
Alert Type ID	Unique identifier for the alert type
Associated With	Object associated with the alert type such as a task
Created By	Name of the user who created the alert type
Created On	Date and time when the alert type was created
Description	Description of the alert type
Enabled	Indicated whether the alert type is enabled or not
Last Updated By	Name of the user who last updated the alert type
Last Updated On	Date and time when the alert type was last updated
Name	Name of the alert type

Task Manager – Filters

This section provides the definitions for the Task Manager Filters columns.

Table 12-7 Column Definitions - Task Manager – Filters

Column Name	Description
Created By	Name of the user who created the filter
Created On	Date and time when the filter was created
Description	Description of the filter
Last Updated By	Name of the user who last updated the filter
Last Updated On	Date and time when the filter was last updated
Name	Name of the filter
Public	Indicates whether the filter is public or not
Type	Type of the filter

Task Manager – Views

This section provides the definitions for the Task Manager Views columns.

Table 12-8 Column Definitions - Task Manager – Views

Column Name	Description
Created By	Name of the user who created the view
Created On	Date and time when the view was created
Default	Indicates whether the view is set as the default view
Description	Description of the view
Last Updated By	Name of the user who last updated the view
Last Updated On	Date and time when the view was last updated
Name	Name of the view
Public	Indicates whether the view is public or not
Type	Type of the view

Task Manager – Attributes

This section provides the definitions for the Task Manager Attributes columns.

Table 12-9 Column Definitions - Task Manager – Attributes

Column Name	Description
Attachments	Indicates whether the attribute has attachments or not
Calculation	Indicates if the attribute is a calculation attribute or not
Created By	Name of the user who created the attribute
Created On	Date and time when the attribute was created
Last Updated By	Name of the user who last updated the attribute
Last Updated On	Date and time when the attribute was last updated
Lines	Number of lines of text that are visible, without scrolling, on the Actions dialog boxes.
Locked	Indicates whether the attribute is locked or not

Table 12-9 (Cont.) Column Definitions - Task Manager – Attributes

Column Name	Description
Name	Name of the attribute
Type	Type of the attribute

Task Manager – Currencies

This section provides the definitions for the Task Manager Currencies columns.

Table 12-10 Column Definitions - Task Manager – Currencies

Column Name	Description
Currency Code	Country's currency code that identifies the currency
Currency Symbol	Currency symbol for the currency code
Decimal Places	Indicates how to display numbers with decimal values
Description	Name of the country associated with the currency code
Enabled	Indicates whether the currency code is enabled or not

Task Manager – Schedule Tasks

This section provides the definitions for the Task Manager Schedule Tasks columns.

Table 12-11 Column Definitions - Task Manager – Schedule Tasks

Column Name	Description
Approver 1-10	Assigned approver level
Approver 1-10 (Actual)	Actual approver
Approver 1-10 (Backup)	Backup approver
Approver 1-10 (Primary)	Primary approver
Approver 1-10 End Date (Actual)	Actual end date when the role was completed
Approver 1-10 End Date (Actual, Local)	Actual end date when the role was completed, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 End Date (Assigned)	Assigned end date for the approver
Approver 1-10 End Date (Assigned, Local)	Assigned end date for the approver of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Rejections (Count)	Total count of scheduled tasks rejected by the approver
Approver 1-10 Scheduled End Date	Effective end date for the approver of the task
Approver 1-10 Scheduled End Date (Local)	Scheduled end date for the approver of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Scheduled Start Date	Effective start date for the approver of the task
Approver 1-10 Scheduled Start Date (Local)	Scheduled start date for the approver of the task, in the local time zone of the org unit (if assigned an org unit)
Approver 1-10 Start Date	Assigned start date of the task

Table 12-11 (Cont.) Column Definitions - Task Manager – Schedule Tasks

Column Name	Description
Approver 1-10 Start Date (Local)	Assigned start date of the task, in the local time zone of the org unit (if assigned an org unit)
Approvers (Count)	Total count of assigned approvers
Assignee	User who can work on the task
Assignee (Actual)	Actual assignee who worked on the scheduled task
Assignee (Backup)	Backup user who can work on the task
Assignee (Primary)	Primary user who can work on the task
Assignee End Date	Effective end date for the assigned user
Assignee End Date (Actual)	Actual end date when the assignee role was completed
Assignee End Date (Actual, Local)	Actual end date when the assignee role was completed, in the local time zone of the org unit (if assigned an org unit)
Assignee End Date (Assigned)	Effective end date for the assignee role to be completed
Assignee End Date (Assigned, Local)	Actual end date when the role was completed, in the local time zone of the org unit (if assigned an org unit)
Assignee End Date (Local)	assigned End Date of the task, in the local time zone of the org unit (if assigned an org unit)
Comments (Count)	Total count of comments for the scheduled task
Created By	Name of the user who created the scheduled task
Created On	Date and time when the scheduled task was created
Description	Description of the scheduled task
End Date	Effective end date of the scheduled task
Ever Been Late (Assignee)	Indicates whether the date when the assignee submitted the task was past due date or not.
Ever Been Late (Approver 1-10)	Indicates whether approver role has ever been late or not
Execution Type	Execution type such as End User, System Automated, or Event Monitoring
Instructions	Set of instructions for completing the scheduled task
Integration	Integration associated with the scheduled task
Last Updated By	Name of the user who last updated the scheduled task
Last Updated On	Date and time when the scheduled task was last updated
Late (Approver 1-10)	Indicates whether the approver completed the task past the due date
Late (Assignee)	Indicates whether the assignee completed the task past the due date
Open Task	Indicates whether the task is opened
Organizational Unit	Assigned organizational unit
Owner	Name of the scheduled task owner, which must be a Service Administrator or Power User
Parent	Task ID of the parent task
Predecessors	Predecessor for the current task. It can be from another template.
Priority	Priority of the task
References (Count)	Count of references added for the scheduled task (URL and content server references)
Rules (Count)	Total count of rules directly on the scheduled task

Table 12-11 (Cont.) Column Definitions - Task Manager – Schedule Tasks

Column Name	Description
Run As	Run the task as the user. Only applicable for system-automated tasks.
Run As Authorized	User who can authorize this task. If the Run As user is the user who also created the task, then the user can authorize the task, without being prompted to re-enter their password.
Start Date	Effective start date of the scheduled task
Start Task Early	Indicates whether the assignee is allowed to open a pending task prior to the scheduled start time
Status (Icon)	Icon indicating the status of the scheduled task
Successors	Successor for the current task
Task ID	Unique identifier for the task
Task Type	Type of the task

Managing Task Manager System Settings

Related Topics

- [Managing Global Integration Tokens](#)
- [Managing Task Manager Organizational Units](#)
- [Managing Holiday Rules for Tasks](#)
- [Changing Configuration Settings](#)

Managing Global Integration Tokens

The Global Integration Tokens feature enables creation of parameterized URLs. The URLs can be used for a variety of purposes.

When creating the URL, the parameters are inserted into the URL. When the URL is clicked, the parameters are replaced with the appropriate values.

For example, the following is an excerpt of the parameters:

```
...$YearName$%22%22Period%20Name%22&val6=%22$PeriodName$%22&col17=%22Logical%20Schedules%22.%22Year%20Name%22&val7=%22$YearName$%22&col8=%22Logical%20Schedules%22.%22Deployment%20Name%22&val8=%22$ScheduleName $%22
```

where

```
$YearName$ = 2012
$PeriodName$ = Jan12
$$ScheduleName$ = DemoSchedule
```

The URL becomes:

```
...
%222012%22%22Period%20Name%22&val6=%22Jan2012%22&col17=%22Logical%20Schedules%2
```

```
2. %22Year%20Name%22&val7=%222012%22&col8=%22Logical%20Schedules%22.%22Schedule%20Name%22&val8=%22DemoSchedule%22
```

Parameters can be configured from static parameters defined in your application, attributes of type Text and List, and the following native attributes assigned to Tasks, Templates, and Schedules:

- Period Name
- Schedule Name
- Task Name
- Task ID
- Year Name

You can access URLs from the following locations:

- **Templates:** After an administrator or power user adds a reference URL to a template in the Instructions section, the URL is clickable on the Instruction tab.
- **Schedule:** After an administrator or power user adds a reference URL to a schedule in the Instructions section, the URL is clickable in Instructions.
- **Task Details:** After an administrator or power user or task owner adds a reference URL to a task in the Instructions section, the URL is clickable in Instructions.
- **Task Types:** After an administrator adds a reference URL to a Task Type in the Instructions section, the URL is clickable on the **Instruction** tab.
- **Task Actions:** Viewers of **Task Actions** can click the reference URLs.

Creating a Global Integration Token

Use these guidelines for creating Global Integration Tokens:

- The token name must be unique.
- Tokens can't be modified.
- Tokens shouldn't be deleted. If you try to delete a token, a warning will display: "Deleting a Global Integration Token will invalidate the URLs that are referencing it. Are you sure you want to continue?"

To create a Global Integration token:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left, and then select **Global Integration Tokens**.
3. Click **New**.
4. Enter:
 - **Name:** A unique token name
 - **Type:** Static or Task Attribute
 - **Token Value:**
 - If **Task Attribute** is selected as the Parameter Type, select the value that is passed when the URL is rendered.
 - If **Static Attribute** is selected as the Parameter Type, enter the value that is passed when the URL is rendered.

5. Click **Save**.

Deleting a Token

To delete a token:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left, and then select **Global Integration Tokens**.
3. Select a token, and then click **Delete**.

A warning message is displayed: "Deleting a Global Integration Token will invalidate the URLs that are referencing it. Are you sure you want to continue?"

4. Click **Yes** to confirm deletion.

Managing Task Manager Organizational Units

Organizational Units enable administrators to model regions, entities, business units, divisions, departments, or any other entity that might be affiliated with a task. Organizational units are hierarchical to facilitate reporting.

When viewing a hierarchy, administrators can expand and collapse it to work with different sections of the hierarchy.

Adding Organizational Units

To add an organization:


1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left and then select **Organizational Units**.
3. Click **Add Sibling**.
4. On the **Properties** tab, enter:
 - **Name:** You can enter a maximum of 255 characters.
Administrators can change the name, and it need not be unique.
 - **Organizational Unit ID:** A unique ID used to identify the transaction for Migration purposes.
The Organizational Unit ID can't be changed after an organizational unit is set. You can enter a maximum of 255 characters.
 - Optional: **Parent Organization:** Enables Administrators to change the hierarchy.
 - **Description:** You can enter a maximum of 255 characters.
 - **Timezone:** Determines which time zone applies to the organizational unit. Selection of a time zone is optional. If a time zone is not selected, the task time zone will revert to the user's time zone.
 - **Holiday Rule:** Determines which list of holidays applies to the organizational unit. Selection of a Holiday Rule is optional.
 - **Work Days:** Determines which days of the week are work days.
5. The **Access** tab enables Administrators to assign viewer and commentator access in a centralized location, rather than having to assign it to each task.

To select a user:

- a. Click **Add**.
- b. In **Select Viewers**, enter the First Name and Last Name, or click **Search Users**, then select **Users** or **Groups**.
- c. In **Search Results**, select the users and click **Add** or **Add All** to move them to the Selected list.

Importing Organizational Units

To import organizational units:

1. On the Home page, click **Application** and then click **Task Manager**.
2. Click the **Organizations** tab on the left and select **Organizational Units**.
3. Click **Import** .
 - Click **Choose File** to navigate to the CSV import file.

Sample Organizational import format:

Note:

The following section shows the import format. This example requires a pre-existing parent organizational unit named "Americas", a holiday rule named "US", and a Viewer named "fm_user5".

```
"OrganizationalUnitID","Name","ParentOrganization","Description","TimeZone",
"HolidayRule","Calendar","Workdays","Viewer1","Commentator1"
"US2","US2","Americas","Import Organization US2 Example","ET
(UTC-05:00)","US","","2-3-5","fm_user5","
```

- For **Import Type**, select one:
 - **Replace**: Replaces the Organizational Unit detail with the Organizational Unit that is in the file that you are importing. It does not affect other units that are not specified in the import file.
 - **Replace All**: Imports a new set of Organizational Units that replaces the existing Units. This option is useful when you want to replace a unit in one system with an updated definition from another system. Organizational Units that are not specified in the import file are deleted.
 - For **File Delimiter**, select **Comma**, **Tab**, or **Other**.
4. Click **Import**.

Selecting an Organizational Unit

Administrators define organizational units in Organizations to help organize and schedule tasks.

To select an organization:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left, and then select **Organizational Units**.

3. Select an organization. An arrow indicates a child organization exists. Expand the parent to select a child organization.

Managing Holiday Rules for Tasks


Holiday Rules are collections of holiday dates that Administrators use when scheduling tasks.

After you create a holiday rule, you can apply the rule to an organizational unit and then apply the organizational unit to the schedule template.

See [Applying a Holiday Rule to an Organizational Unit](#) and [Applying a Holiday Rule to a Schedule Template](#).

Creating Holiday Rules

To create holiday rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left.
3. Click **Holiday Rules**.
4. Click **New**.
5. Enter:
 - **Holiday Rule ID**: You can enter a maximum of 255 characters. The **Holiday Rule ID** is mandatory and must be unique.
 - **Name**: You can enter a maximum of 50 characters. The **Name** does not need to be unique.
 - **Year**: The Year attribute behaves as a filter option. You don't need to select a value for this attribute. If you do, the table is filtered to display the dates associated with the selected year.
6. To name a holiday, in the **Holiday** section, click **Import** () to import the list of holidays, or click **New** and enter the date and name of the holiday.

Applying a Holiday Rule to an Organizational Unit

After you create a holiday rule, you can apply it to an organizational unit, and then apply it to a schedule.

To apply a holiday rule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left.
3. Click **Organizational Units**.
4. Create or edit an organization.
5. On **Properties**, from the **Holiday Rule** drop-down, select a holiday rule.
6. Click **Save**.

Applying a Holiday Rule to a Schedule Template

After you create a holiday rule and apply it to an organizational unit, you can apply the organizational unit to a schedule template.

To apply a holiday rule:


1. On the Home page, click **Application**.
2. Click **Task Manager**.
3. Click the **Templates** tab on the left.
4. Select a template, click the **Actions** icon to the right of the template, and then select **Create Schedule**.
5. For **Schedule Parameters**, specify the **Schedule**, **Year**, **Period**, and **Day Zero Date**.
6. Under **Date Mapping**, click **Advanced Configuration**.
7. For **Organizational Unit**, select **Use Task Value** or **Set Value To**. For **Set Value To**, click the **Search** icon to select an organizational unit.
8. Select the organizational unit that you created or edited that contains the holiday rule and click **OK**.
9. Click **OK**.

The Schedule Parameters Date Mapping now shows the holiday.

Importing Holiday Dates

You can import dates into a holiday rule.

To import holiday dates:

1. On the Home page, click **Application** and then click **Task Manager**.
2. Click the **Organizations** tab on the left.
3. Click **Holiday Rules**.
4. Create or select a holiday rule.
5. Above the **Holiday** section, click **Import** .
6. Click **Choose File** to navigate to the CSV import file.
7. For **Import Type**, select one:
 - **Replace**: Replaces the holiday dates with the holiday dates in the file that you are importing. Does not affect other units that are not specified in the import file.
 - **Replace All**: Imports a new set of holiday dates that replaces the existing holiday dates. Use this option to replace unit in one system with an updated definition from another system. Holiday dates that are not specified in the import file are deleted.
8. For **Date Format**, select a format from the drop-down list of allowed date formats. Date formats are not translated. By default, the date format is set to the locale date format of the exported file location.
9. For **File Delimiter**, select **Comma**, **Tab**, or **Other**.
10. Click **Import**.

Editing Holiday Rules

To edit holiday rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left and then select **Holiday Rules**.

3. Select a rule.
4. Edit the following fields:

 **Note:**

The **Holiday Rule ID** is not editable.

- **Name:** The name can be a maximum of 50 characters. It does not need to be unique.
 - **Year:** The Year attribute behaves as a filter option. You do not need to select a value for this attribute. If you do, the table is filtered to display the dates associated with the selected year.
5. Click **Save**.

Duplicating Holiday Rules

To duplicate holiday rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab on the left.
3. Click **Holiday Rules**.
4. Select a rule and click **Duplicate**.
5. Edit the rule as needed.

Deleting Holiday Rules

You cannot delete a holiday rule associated with an organizational unit that is not logically deleted. A list of organizational units to which the holiday rule was assigned is displayed.

To delete holiday rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Organizations** tab, and then select **Holiday Rules**.
3. Select a rule, and then click **Delete**.

Changing Configuration Settings

Related Topics

- [Allowing Comment Deletions](#)
- [Allowing Task Deletions](#)
- [Enabling Email Notifications](#)
- [Setting Task Manager Governors](#)
- [Allowing Reassignment Request Approvals](#)
- [Reopening Tasks](#)
- [Settings for Task Manager Reports](#)
- [Setting Export to Excel Format](#)
- [Specifying Task Display in Smart View](#)

- [Displaying Upcoming Tasks in Worklist and Welcome Panel](#)

Allowing Comment Deletions

A Service Administrator can decide to allow deletions of comments in tasks by using the **Allow Comment Deletion** configuration settings option. By default, this option is Off.

To allow users to delete comments:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Allow Comment Deletion**.
4. Select **Turn On** to enable deletions.

Allowing Task Deletions

Service Administrators can specify whether to allow tasks to be deleted. By default, this option is Off.



Note:

The setting affects only running and closed tasks.

To allow users to delete tasks:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Allow Task Deletion**.
4. Select **Turn On** to enable deletions.

Enabling Email Notifications

Service Administrators can set up Email Notifications for Task Manager users. When you enable email notifications, batch notifications are generated. When the notification is no longer required, you can deactivate email notifications and reminders.



Note:

By default, email notifications are not enabled.

Administrators can also assign the number of days before a due date to send reminder notifications.

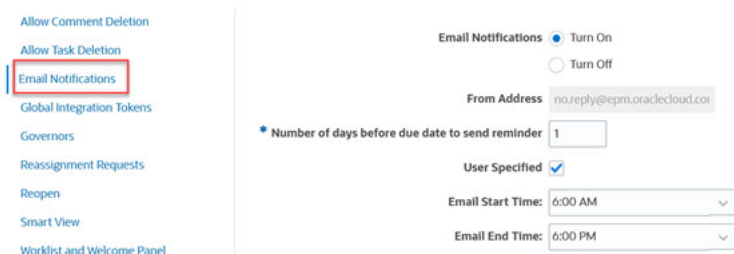
Due Date reminder notifications are emailed to Assignees and Approvers in these conditions:

- Responsibility for a Task Manager action changes - sent based on information in the action
- A due date is missed - sent based on information in the action
- A due date is approaching - sent based on the number of days in advance that you specify

To enable email notifications:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Email Notifications**.
4. For **Email Notifications**, select **Turn On** to initiate the notification, or **Turn Off** to deactivate the notification.
5. Enter an email for the **From Address**. You can edit the address to supply a specific address, or to include a product acronym to alert the user where the notification is coming from. If the **From Address** field can be edited, enter the email. Otherwise, the default email address displayed is `no.reply@epm.oraclecloud.com` and can't be edited. Email notifications also include the service name in the footer of the email. For example: "Note - This is an automated email notification generated from EPM Task Manager on efim.arcs".
6. Enter the **Number of days before due date to send reminder**.
7. Select the **User Specified** checkbox. When the administrator selects this checkbox, then the users can customize their personal email notification settings. If the administrator does not select this checkbox, user inherits the settings made by the administrator.
8. Use **Email Start Time** and **Email End Time** to specify the time period in a day when scheduled emails will be sent. This setting will take effect in each user's individual time zone.

Manage System Settings



9. Specify settings for **Notification Type**. The following types of notifications can be defined:
 - **Late Notification**
 - **Status Change Notification**
 - **Due Date Reminder Notification**

Notification Type	Notify Me
<ul style="list-style-type: none"> ▾ Late Notification <ul style="list-style-type: none"> ▾ Task Manager <ul style="list-style-type: none"> You are the task approver and task approver is late You are the task assignee and task assignee is late You are the task owner and task assignee is late You are the task owner and task approver is late 	<ul style="list-style-type: none"> Every 2 hours Every 2 hours Every 2 hours Every 2 hours Every 2 hours
▸ Status Change Notification	Once a day
▸ Due Date Reminder Notification	Every 6 hours

Select an option for **Notify Me**:

- **Immediately**: For example for **Status Change Notification**, expand **Task Manager**, and then expand again to choose **You are the alert approver and alert status changes to open with approver**. Then select **Immediately** to be notified as soon as an approver takes action.

 **Note:**

If you set **Notify Me** to **Immediately**, the email notifications are sent immediately even when it is outside of the user's email start/end time.

- **Once a day**
- **Every 2 hours**
- **Every 3 hours**
- **Every 4 hours**
- **Every 6 hours**
- **Mixed**
- **Never**: Select this option to deactivate a notification. Note that this option is only applicable for **Status Change Notification** and **Due Date Reminder Notification**. For **Late Notification**, only the following notification types get this option:
 - **You are the task owner and task assignee is late**
 - **You are the task owner and task approver is late**

 **Note:**

For each type of notification, expand each notification preferences and choose when to be notified:

For example for **Status Change Notification**, expand **Task Manager**, then expand and select **You are the task approver and task approver is late**. Select **Every 2 hours** as a choice of notification.

Note that you can override a setting at a lower level (for example, configure **Notification Type** to **Every 2 hours**, and override one of the Conditions to **Once a Day**). Then the parent setting(s) displays the word **Mixed**, to provide a visual indication that more than one preference setting has been assigned to child level settings. You can change the value from **Mixed** to a different preference setting; the child level settings are changed to the new setting.

If an Administrator disables the **Email Notifications** in Services, then notifications are suspended.

For more information, see [Managing Notification Types and Settings](#).

See also, Setting Up Email for Notifications in *Working with Planning*.

Managing Notification Types and Settings

Service Administrators can define the default settings of all Task Manager notifications for all users under **Notification Types**.

Late Notification Options

Table 12-12 Table for Late Notification Types

Notification	Valid Values
You are the task approver and task approver is late	<ul style="list-style-type: none"> • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task assignee and task assignee is late	<ul style="list-style-type: none"> • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task assignee is late	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task approver is late	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Status Change Notification Options

Table 12-13 Table for Status Change Notification Types

Notification	Valid Values
You are the alert assignee and alert status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the alert approver and alert status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are the alert owner and alert status changes to open with owner	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the alert owner and alert status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the alert owner and alert status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the alert owner and alert status changes to completed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are an alert viewer and alert status changes to open with owner	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are an alert viewer and alert status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are an alert viewer and alert status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are an alert viewer and alert status changes to completed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule owner and schedule is created	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule owner and schedule status changes to open	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule owner and schedule status changes to closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule owner and schedule status changes to locked	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are the schedule viewer and schedule is created	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule viewer and schedule status changes to open	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule viewer and schedule status changes to closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the schedule viewer and schedule status changes to locked	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task assignee and task status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task approver and task status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the backup assignee and the primary assignee is unavailable	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are the backup approver and the primary approver is unavailable	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task authorizer and schedule status changes to open	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task status changes to closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task status changes to force closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task status changes to aborted	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are the task viewer and task status changes to open with assignee	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task viewer and task status changes to open with approver	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task viewer and task status changes to closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task viewer and task status changes to force closed	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task viewer and task status changes to aborted	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the journal submitter and the journal needs to be posted	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Table 12-13 (Cont.) Table for Status Change Notification Types

Notification	Valid Values
You are the journal approver and the journal needs approval	<ul style="list-style-type: none"> • Never • Immediately • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Due Date Reminder Notification Options

Table 12-14 Table for Due Date Reminder Notification Types

Notification	Valid Values
You are the task approver and task is "At Risk"	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task assignee and task is "At Risk"	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task owner and task is "At Risk"	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task assignee and assignee due date is within 1 days	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day
You are the task approver and approver due date is within 1 days	<ul style="list-style-type: none"> • Never • Every 2 hours • Every 3 hours • Every 4 hours • Every 6 hours • Once a day

Setting Task Manager Governors

In Task Manager, you can set governors on various system settings and the system provides default settings which you can decrease or increase up to the maximum value. For example, you can specify the maximum number of rows to display in lists.

- **Maximum Number of Items displayed in a List:** Determines the maximum number of rows displayed in a List view; for example, Schedule Tasks.
- **Maximum Approver Levels:** Determine the number of levels that a task might be reviewed.
- **Select maximum file upload size (MB):** Determines the maximum attachment file size that users can upload. This setting helps administrators adapt to work within limitations of the environment in which the application is installed.

To set Task Manager governors:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. On the **Manage System Settings** page, click **Governors**.
4. Specify a maximum value or leave the default setting:
 - **Maximum Number of Items displayed in a List:** The default is 10000.
 - **Maximum Approver Levels:** Select a value from 1 to 10.
 - **Select maximum file upload size (MB):** Select a value from 5 MB, with incremental values of 5 MB, up to 100 MB.
5. In the **Reports** section, change the setting only if instructed by Oracle Support.
6. Click **Save**.

Allowing Reassignment Request Approvals

As an Administrator, you can specify which workflow users can directly perform and approve reassignment requests rather than submitting requests to an Administrator or Power User for approval.

Users can then approve reassignment requests from their Worklist.

Service Administrators should also see the reassignment requests if they are required to approve the requests in case the Task Owner is unavailable.

To allow workflow users to perform reassignments:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Reassignment Requests**.
4. For **Allow reassignment request approval by**, select one or more options:
 - **Administrator**
 - **Power User**
 - **Users**

Reopening Tasks

In Task Manager, there might be times when users need to reopen a task. Administrators can specify whether to allow open or closed tasks to be reopened.

To allow reopening of tasks:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Reopen**.
4. Set the conditions to allow reopening of a task that is Open with an Assignee or Approver. For **Task is Open with Assignee or Approver**:
 - **Not Allowed**: This is the default option and assignees or approvers cannot change the workflow of an open task after it has been submitted or approved.
 - **Allowed for all approvers**: Allows approvers who have approved a task to return the workflow to themselves.
 - **Allowed for all assignees and approvers**: Allows an assignee who has submitted a task or an approver who has approved a task to return the workflow to themselves.
5. Set the conditions to allow reopening closed tasks. For **Task is Closed**:
 - **Not Allowed**: This is the default option and users will not be able to reopen a closed task.
 - **Allowed for final approver**: Allows only the final approver to reopen and return the workflow to themselves.
 - **Allowed for all approvers**: Allows an approver to reopen and return the workflow to themselves.
 - **Allowed for all assignees and approvers**: Allows assignees and approvers of a task to reopen and return the workflow to themselves.

Settings for Task Manager Reports

When generating reports in Microsoft Excel format, a row that spans multiple lines may result in empty rows displayed after the row that contains data. This may cause a problem if you've scripts that perform calculations on a row value. Task Manager provides a setting to control the display of these extra rows.

To resolve this issue, you must modify the template file of the report by performing the following:

- Remove any empty lines from the table row
- Change the row height of the row to 0

Alternatively, Task Manager provides a setting to control the display of these extra rows. This setting applies to all the reports.

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Click **Reports**.
4. Unselect **Enable Row Split** to ensure that multiple rows aren't displayed for each row of data in Microsoft Excel.

Setting Export to Excel Format

To export data to Microsoft Excel, you can set the format to .xls or .xlsx.

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Click **Reports**.
4. In **Export Excel Format**, select one of the following options:
 - **Excel 97 - 2003 (.xls)**: Exports data in tables to .xls format.
 - **Excel (.xlsx)**: Exports data in tables to .xlsx format.

Specifying Task Display in Smart View

You can configure the display of Task Manager tasks when they are launched from Oracle Smart View for Office by selecting columns to display; for example, Task Attributes.

To select columns to display in Smart View:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab.
3. Select **Smart View**.
4. Under **Column Selection**, from the **Available** list, select the columns to display, then click the **Add** arrow keys to move them to the **Selected** column, or **Remove** to remove them.
You can select a maximum of 30 columns, and reorder the columns as needed.
5. Click **Save** to save your selection.

Displaying Upcoming Tasks in Worklist and Welcome Panel

As an administrator, you can decide whether to show only Current Tasks, or Current and Upcoming Tasks in the Workflow of the Worklist and Welcome Panel.

If you enable Current and Upcoming Tasks, users can see items currently available to work on, and also items in the upcoming workflow. For example, users can see an upcoming task that is due for them to approve, but not immediately available, as the preparer has not yet finished the task.

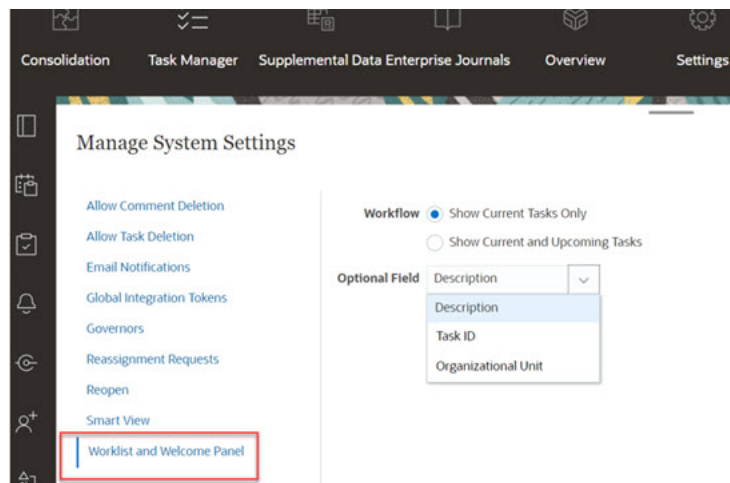
You also have the option to display the tasks with description (default) or by the Task ID/Organizational Unit.

By default, the system displays only Current Tasks.

To set the display for tasks:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **System Settings** tab on the left.
3. Select **Worklist and Welcome Panel**.
4. Select an option for **Workflow**:
 - **Show Current Tasks Only**
 - **Show Current and Upcoming Tasks**
5. Select an option for **Optional Field**:

- **Description** (default)
- **Task ID**
- **Organizational Unit**



Managing Task Manager Attributes

Attributes are user-defined fields defined centrally by administrators and used in many places.

You can specify different value types for attributes: Date, Date/Time, Integer, List, Multi-Line Text, Number, True/False, Text, User, and Yes/No. For example, you can define a custom attribute named Auto Submit with a value type of Yes or No. When you assign the Auto Submit attribute to an item, you can set it to Yes for tasks required by external users.

If you select the List type, you can define a pick list of values. For example, you can define a List attribute named Sales Region, with North, South, East, and West as values.

You can create, edit, and delete attributes.

Note:

The maximum number of Task Manager attributes that you can create or import is 10,000.

Defining Task Manager Attributes

To define a Task Manager attribute:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. Click **New**, then on the **Properties** tab specify the following properties:
 - **Name:** You can enter a maximum of 80 characters.

 **Note:**

You can create an object using the same name that you used earlier and deleted. Any objects that were previously linked to the deleted object will be associated with the new object.

- **Description:** You can enter a maximum of 255 characters.
- **Type:**
 - **Date**
 - **Date/Time**
 - **Integer:** Allows a value between -2147483648 and 2147483647. For **Total**, specify the totaling method for the attribute:
 - * **None** (default): No total is calculated.
 - * **Average:** The average of the rows with data. Rows without data are not counted in the denominator
 - * **Count:** The count of the rows with data.
 - * **Sum:** Additive total.
 - **List:** Click **List Values** to enter a list of valid responses to the question. You can enter a maximum of 255 characters.
 - **Multi-Line Text:** Click **Format** and specify the **Number of Lines**, from 3 to 50 lines. Multi-Line Text determines how many lines of text are visible, without scrolling, on the Actions dialog boxes. The maximum length should be less than 4,000 characters.

Select **Include Attachments** if you want to include an **Attachments** section on the Actions dialog box.
 - **Number:** Enter a value xxxxxxxxxxxxxxxx.xxxxxxxxx (17 digits and 9 decimal places). Click **Format** and select number formatting options:
 - * For **Decimal Places**, enter a value for the number of decimal places to display.
 - * For **Display As Percentage**, select if you want a percentage to display.
 - * Select the **Thousands Separator** option if you want numbers to display a thousands separator (for example, 1,000.00).
 - * For **Currency Symbol**, select a currency symbol; for example, \$ (United States of America Dollar).
 - * For **Negative Number**, select how to display negative numbers; for example, (123).
 - * For **Scale**, select a scale value for numbers; for example, 1000.
 - **Text:** Enter a maximum of 4000 characters.
 - **True/False**
 - **User**
 - **Yes/No**
- **Calculation:** Select to add logical and mathematical functions for attributes in the **Calculation** tab.

See [Defining Calculation Attributes](#).

Defining Calculation Attributes

Calculation attributes enable you to add logical and mathematical functions to derive values for attributes. They can be embedded within other calculated attributes to produce complex functions. Calculated attributes are read-only. They can only be evaluated against Schedules.

Schedules: You can add any Calculation and the calculation is evaluated, regardless of whether or not it was explicitly assigned to the task.

Templates: You cannot add a custom attribute that has the Calculation option selected as a column or a filterable attribute.

When administrators add attributes to the Attributes sections in the Actions dialogs, they are viewable by workflow users. Administrators can restrict access to certain roles by setting the access to Do Not Display. For example, for calculated attribute XYZ, an administrator could set the access to `Viewer: Do Not Display` so that the XYZ attribute is not displayed for users with only the Viewer role.

Any user role can add calculated attributes as columns in views and portlets. They can also be added as filterable attributes in the Filter Panel.

To define a calculation attribute:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. Click **New**, and then on the **Properties** tab enter a **Name** for the attribute, and then select an attribute **Type**.
4. Select the **Calculation** option.
5. On the **Calculation** tab, select a **Calculation Type**.

You can select from the following calculation types. The available types are determined by the attribute **Type** (**Text**, **Integer**, and so on).

- **Assign Value to List:** Assign custom values to a List type attribute
- **Assign List To Value:** Assign custom list values to the values of a different attribute. Only available for List type attributes.
- **Conditional:** A conditional calculation (If – Then – Else)
- **Scripted:** A free-form scripted calculation. Only available for attributes of type Integer, Multi-line Text, Number, or Text.

The following table lists the Calculation types available for each Attribute type.

Attribute Type	Assign Value to List	Conditional	Scripted	Assign List to Value
Date				
Date/Time				
Integer	X	X	X	
List		X		X
Multi-Line Text	X	X	X	
Number	X	X	X	
Text	X	X	X	
True/False		X		

Attribute Type	Assign Value to List	Conditional	Scripted	Assign List to Value
User				
Yes/No		X		

Calculation Definition

The **Scripted** Calculation type enables you to enter a free-form calculation equation. You can use **Add Attribute** and **Add Function**:

- **Add Attribute:** Select an attribute and insert the attribute into the Calculation Definition box at the location of the cursor. If the cursor is in the middle of a word or attribute, the word/attribute will be replaced in the definition. The script format adds brackets {} around the name of the new attribute.

The only available attributes are Schedule attributes.

- **Add Function:** Select a function and add the function to the Calculation Definition. The Function is added with placeholders for each parameter.

For example: Insert the DATE_DIFF function in the calculation definition:

```
DATE_DIFF(<Date1>, <Date2>, <Type>)
```

Then replace the placeholders with attributes:

```
DATE_DIFF( {Start Date}, {End Date}, 'DAYS')
```

Numeric and Date Functions

- **Absolute Value:** Returns the absolute value of a specified number. If a number is less than zero, the positive value of the number is returned. If the specified number is equal to or greater than zero, the specified number is returned.

```
ABS(<Number>)
```

- **Add Month:** Returns a date offset a specified number of months from the starting date. The date will always fall in the specified month offset. If the starting date has a day value beyond what is in the offset month, the last day of the offset month will be used. For example, EDate (31-Jan-2017, 1) returns (28-Feb-2017). For Months, enter the number of months before or after the start date. A positive value for months yields a future date. A negative value yields a past date.

```
ADD_MONTH(<Start Date>, <Months>, <Length>)
```

Example: ADD_MONTH (DATE (2017, 2, 15) 3)

- **Date:** Returns a date value based on specified integer values for the year, month and day.

```
DATE(<Year>, <Month>, <Day>)
```

- **Date Difference:** Returns the difference in years, months, days, hours, minutes, or seconds between two dates. For DATE 1 and DATE 2, the values TODAY and NOW can be used, which denote the current date (with no time component) and date-time, respectively.

```
DATE_DIFF(<Date1>, <Date2>, <Type>)
```

Example: DATE_DIFF({Start Date}, 'TODAY', 'DAYS')

- **Day:** Returns the day value of a date as an integer number

```
DAY(<DATE>)
```


- **Extract Text:** Returns the substring within the value, from the specified positions.

SUBSTRING(<Value>, <Location>, <Length>)

Example: SUBSTRING({Name}, 4, 10)

- **If Then Else:** Allows you to insert a conditional calculation into the scripted calculation. IF_THEN_ELSE calculations can also be nested to support ELSE IF type calculations.

IF_THEN_ELSE(<Condition>, <Value1>, <Value2>)

Example: IF_THEN_ELSE(({Priority} = 'Low'), 1, IF_THEN_ELSE(({Priority} = 'Medium'), 2, IF_THEN_ELSE(({Priority} = 'High'), 3, 0))

Example: IF_THEN_ELSE(({Priority} = 'Low'), 'Good'
IF_THEN_ELSE(({Priority} = 'Medium'), 'Better'. 'Best'))

- **Instring:** Returns the index of the substring within the value.

INSTRING(<Value1>, <Value to Search>)

Example: INSTRING({Name}, 'a')

- **Length:** Takes a text value as a parameter and returns an integer which is the number of characters in the text. If the value is empty/null, the calculation will return 0.

Length ({<attribute>})

Example: LENGTH("Value") would return 5, and LENGTH({Name}) would return the number of characters in the name of the object.

Use the calculation with SUBSTRING to extract the last four characters of a text value.

SUBSTRING({MyString}, LENGTH ({MyString}) - 4

- **Lowercase:** Returns the value in lower case

LOWERCASE(<Value>)

Example: LOWERCASE ({Task Code})

- **Maximum:** Returns the maximum value from a list of attributes. There can be any number of parameters.

MAX <Value1>, <Value2>, <ValueN>)

Example: MAX({Scripted Substring Loc a}, {Scripted Substring Loc s},
{Scripted Substring Loc t})

- **Minimum:** Returns the minimum value from a list of attributes. There can be any number of parameters.

MIN (<Value1>, <Value2>, <ValueN>)

Example: MIN({Scripted Substring Loc a}, {Scripted Substring Loc s},
{Scripted Substring Loc t})

- **Month:** Returns the month value of a date as an integer number (1-12)

MONTH (<DATE>)

- **Power:** Raises one number to the exponential power of another.

POWER(x,y) where x=BASE NUMBER, and y=EXPONENT and x and y can be attributes or calculations, as long as they are numeric.

Example: POWER(3,4)=81

 **Note:**

Fractional values will reduce the number to its root. For example, `POWER(27, 1/3) = 3` the cube root.

Negative values will perform an inverse of the exponential calculation. For example, `POWER(2, -2) = 1 / (2^2) = 1 / 4 = .25`.

- **Round:** Returns the value rounded to the decimal places specified

`ROUND <Attribute>, <Decimal Places>`

Example: `ROUND((Scripted Substring Loc t) / 7), '4')`

- **Text Location:** Returns the index of the substring within the value, starting at 1 as the first position.

`INSTRING(<Value>, <Value To Search>)`

Example: `INSTRING(UPPERCASE({Name}), 'TAX')`

- **Uppercase:** Returns the value in upper case.

`UPPERCASE(<Value>)`

Example: `UPPERCASE({Name})`

- **Year:** Returns the year value of a date as an integer number.

`YEAR (<DATE>)`

Calculation Validation

The following validation checks are performed when you save the Calculation:

- The syntax of the Calculation is correct.
- The Attributes and Functions specified in the Calculation exist.
- Parameters to Functions are correct.
- No Circular Loops exist.

Importing List Attributes

To import Task Manager attributes of the List type:


1. Create an import file of List attributes in a TXT file format, with each value on a separate line.

For example:

```
Blue
Yellow
Red
Green
```

The import option is always "Replace All".

2. On the Home page, click **Application**, and then click **Task Manager**.
3. Click the **Attributes** tab on the left.

4. Select an attribute of type **List**, and click **Edit**.
5. Click **Import** .
6. For **File**, click **Choose File**, find a TXT import file, and then select a **File Delimiter**.
7. Click **Import**. **Import List Values** displays the values: Total List Values, Completed, Errored, List Values Created, and List Values Updated.

If **Completed Successfully**, click **OK**.

If **Completed with Errors**, the errors are listed. To export the error list, click **Export to Excel**.

Editing Attributes

You can edit the name of a custom Task Manager attribute. If the attribute type is a List, you can also add, rename, or delete list values.

To edit Task Manager attributes:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. Select an attribute and click **Edit**.
4. Edit the attribute name.

Note:

If the attribute is a List type, you can add, rename, or delete list values. After a custom attribute is saved, you can't change its type.

5. Click **OK**.

All related templates, schedules, task types, or tasks are updated.

Duplicating Attributes

You can duplicate attributes.

To duplicate attributes:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. Select an attribute to duplicate, and click **Duplicate**.
4. Click **Close**.

Deleting Attributes

You can delete attributes that you no longer need. When you delete an attribute, the system removes all references to the attribute.

To delete attributes:

1. On the Home page, click **Application**, and then click **Task Manager**.

2. Click the **Attributes** tab on the left.
3. Select the attributes to delete, and click **Delete**.
4. At the confirmation prompt, click **Yes**.

Viewing Attributes

In Attributes, you can specify which columns to display for the list of attributes, or show all. You can also reorder columns, sort columns by ascending or descending order, and change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. Do one or more of the following tasks:
 - To display all columns, select **View**, then **Columns**, and then select **Show All**.
 - To display specific columns, select **View**, then **Columns**, and then select or deselect the column names.
 - To reorder columns, select **View**, and then **Reorder Columns**, select columns and use the Up or Down arrows or drag them to change the order.
 - To sort columns, hover over a column header until the Sort icons are displayed, and then click **Sort Ascending** or **Sort Descending**.
 - To change column widths, hover over the column header dividers until the arrows display, and drag the columns to the desired width.

Searching for Attributes


You can use the Search function in the Attributes list to find attributes for Task Manager tasks. You can enter full or partial names on which to search. Using the filter bar, you can control the attributes that you see in the list. By default, all attributes are displayed.

To search for Task Manager attributes:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Attributes** tab on the left.
3. To search for an attribute, enter search criteria in the **Search** text box.
4. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals**, **Does Not Equal**, **Contains**, **Does Not Contain**, **Starts With**, and **Ends With**.

You can filter attributes using these categories: **Name**, **Type**, **Calculation**, **Created By**, **Created On**, **Last Updated By**, or **Last Updated On**.

**Note:**

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click **Clear All Filters** in the  icon.

Managing Task Types

Related Topics

- [Task Types](#)
- [Creating Task Types](#)
- [Viewing Task Type History](#)
- [Editing Task Types](#)
- [Viewing Task Types](#)
- [Searching for Task Types](#)
- [Importing Task Types](#)
- [Exporting Task Types](#)
- [Deleting Task Types](#)

Task Types

Task Types are saved definitions of commonly performed tasks. They identify and categorize tasks commonly performed during a business process, for example, Data Entry or General Ledger Extract. Task Types enable you to set default information, such as settings that must be input by the user, and questions or instructions that are shared by all tasks of that type. For example, if you have a set of required questions to be answered by users responsible for data loads, you can create a Data Load Task Type with the required questions. When you create data load tasks, you can select the Data Load Task Type and the questions are automatically included in the tasks.

Two predefined Task Types are installed by default:

- **Basic Task:** Basic Task Type that does not contain instructions, questions, or attributes.
- **Parent Task:** Enables you to create parent tasks to define task hierarchies.

To create and manage Task Types, you must be assigned the Service Administrator or Power User security role. Power Users can create their own Task Types, but can only view those of others.

Creating Task Types

Task Types enable you to set default information for a task, such as settings that need to be input by the user, or questions or instructions that are shared by all tasks of that type.

To create a Task Type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Click **New**.
4. See also:
 - [Setting Task Type Properties](#)
 - [Setting Task Type Parameters](#)
 - [Specifying Task Type Instructions](#)
 - [Specifying Task Type Questions](#)
 - [Working With Task Type Rules](#)
 - [Viewing Task Type History](#)

Setting Task Type Properties

The Properties tab enables you to set the name, ID, and description, and associate an Integration Type.

For End User Types, you can allow an Assignee to open a pending task prior to the scheduled time, if all task predecessor conditions have been met.

To set Task Type properties:

1. Create a new Task Type.
The **Properties** tab is displayed by default.
2. Enter a **Task Type Name**. You can enter a maximum of 80 characters.
3. Enter a **Task Type ID** that can be used to identify the Task Type. You can enter a maximum of 80 characters.
4. Enter a **Description** for the Task Type. You can enter a maximum of 255 characters.
5. To specify an Integration, click the magnifying glass to search for and select an Integration, then click **OK**. Selecting an Integration enables the Task Type to inherit the parameters from that Integration.
6. **Optional:** For an End-User Type, select **Allow Early Start** to allow the Assignee to open the task before the scheduled start time.
7. See also:
 - [Setting Task Type Parameters](#)
 - [Specifying Task Type Instructions](#)
 - [Specifying Task Type Questions](#)
 - [Working With Task Type Rules](#)
 - [Viewing Task Type History](#)

Setting Task Type Parameters

The Parameters tab enables you to set the parameters for the Task Type.

 **Note:**

The Parameters tab is available only if you have selected an Integration that has parameters that must be defined. Parameter values can be set at the Task Type level or at the task level.

Some tasks contain parameters that need to be changed each time that they are applied to a schedule. For example, date-driven parameters for Data Entry tasks may need to be set to the current month each time they are added to a schedule. When you set Task Type parameters, you can specify which parameters can be overridden during the scheduling process.

To set Task Type parameters:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab, and then click **New**.
3. Enter **Task Type Name** and **Task Type ID**.
4. Select the **Parameters** tab.
5. Enter parameter values as required.
6. **Optional:** To enable the parameter to be overridden at scheduling time, select **Override at Scheduling**.
7. See also:
 - [Setting Task Type Properties](#)
 - [Specifying Task Type Instructions](#)
 - [Specifying Task Type Questions](#)
 - [Working With Task Type Rules](#)
 - [Viewing Task Type History](#)

Specifying Task Type Instructions

You can create a set of instructions for completing tasks. You can also add references to documents, files, or URLs to websites. For example, you can attach a policy document as a reference, or a link to a product instruction guide.

To specify instructions:

1. On the Home page, click **Application**, and then **Task Manager**.
2. Click the **Task Types** tab, and then click **New**.
3. Enter the **Task Type Name** and **Task Type ID**.
4. Select the **Instructions** tab.
5. In **Instructions**, enter the instruction text.

To add a reference:

1. In the **References** section, click **Add**.
2. From the **Type** list, select one of these types:
 - **Local File:** Click **Choose File** to select and attach the file, enter a **Name**, and then click **OK**.

- **URL:** Enter the **URL** and a **URL Name**; for example, <http://www.oracle.com>, Oracle, and then click **OK**.

 **Note:**

You can add one or more attachments by using drag and drop functionality available from the **Add Attachments** dialog box. You can rename the attachment in the **Name** field, if desired. If you drag and drop multiple attachments, you can upload them at one time.

You must access the **Add Attachments** dialog box to properly drag and drop attachments.

 **Tip:**

To delete a reference, select the reference, and click **Delete**.

3. See also:
 - [Setting Task Type Properties](#)
 - [Setting Task Type Parameters](#)
 - [Specifying Task Type Questions](#)
 - [Working With Task Type Rules](#)
 - [Viewing Task Type History](#)

Specifying Task Type Questions

You can specify Task Type questions that apply to all tasks with that Task Type.

 **Note:**

The Questions tab is not available for a Task Type that uses an automated Integration.

To specify questions:

1. Create a new Task Type.
2. Select the **Questions** tab.
3. Click **New**.
4. From the **New Question** dialog box, for **Question**, enter the text for the question.
5. From the **Type** list, select a question type:
 - **Date**
 - **Date/Time**
 - **Integer**
 - **List:** Enter a list of valid responses to the question.

- **Multi-Line Text:** The maximum length should be less than 4,000 characters.
For **Number of Lines**, enter a value between 3 and 50 lines. Multi-Line text determines how many lines of text are visible, without scrolling, on the Actions dialog boxes.
Select **Attachments** if you want the custom attribute to include an attachments section.
 - **Number:** Select formatting options to override the defaults set in the **Preferences** section of **System Settings**:
 - For **Decimal Places**, enter the number of decimal places to display.
 - Select **Display as Percentage** to display a percent sign.
 - Select **Thousands Separator** to display a thousands separator (for example, 1,000.00). The system displays the thousands separator symbol for the user locale.
 - For **Currency Symbol**, select the currency; for example, \$ (United States of America Dollar).
 - For **Negative Number**, select how to display negative numbers; for example, (123).
 - To scale a number, in **Scale**, select from 1000 to 1000000000000.
 - **True/False**
 - **Text:** The maximum length is 255 characters.
 - **User**
 - **Yes/No**
6. Assign a **Role**. The purpose of assigning a role is to determine which role can answer the question:
- **Assignee**
 - **Approver**
 - **Owner**
 - **Viewer**
- When re-ordering questions, you can only re-order within a role.
7. If the question is required, select **Required**.
The **Required** checkbox is disabled for Questions assigned to Owner or Viewer roles.
8. Click **OK** to save the question.
9. **Optional:** To change the order of questions, select a question, then click **Move to Top**, **Move Up**, **Move Down**, or **Move to Bottom**.
10. **Optional:** To edit a question, select the question and click **Edit**. To remove a question, select the question and click **Delete**.
11. Click **Save and Close** to save the Task Type.
12. See also:
- [Setting Task Type Properties](#)
 - [Setting Task Type Parameters](#)
 - [Specifying Task Type Instructions](#)

- [Working With Task Type Rules](#)
- [Viewing Task Type History](#)

Assigning Task Type Attributes

To locate Task Types in the system, you can apply attributes to the Task Type. When you select an attribute, you can set a value for the attribute based on the attribute type. You can later filter by the attribute value.

For example, you may have a List attribute named Sales Region with the values of North, South, East, and West. The current Task Type applies only to the West Sales Region, so you can add the Sales Region attribute and set it to "West".

To apply an attribute:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left, and then click **New**.
3. Enter the **Task Type Name** and the **Task Type ID**.
4. Select the **Attributes** tab.

Enables administrators to assign attributes and provide values for the attributes.

To add an attribute, click **Add**. Enter:

- **Attribute:** Select an attribute from the list of defined attributes.
- **Type:** This field is not editable; it's populated by the Attribute.
- **Value:** Select a value associated with the type of attribute; for example, a numeric value for Formatted Number attribute, a List for List attribute, multiple lines of displayed text without scrolling for Multi-Line Text, a name of a person, User, or Yes or No for the Yes/No attribute.
- **Access:** All roles have view access unless otherwise specified in the Access box.

To add an access, for each of the roles:

- a. Click **Add**.
 - b. Select a role: **Owner**, **Assignee**, **Approver**, with separate roles for each Approver level currently in use in the application, or **Viewer**.
 - c. Select one of the Role access types.
 - **Do Not Display:** Does not see this attribute on the Task Actions dialog box, or in any of the dashboards, list views, or reports.
 - **Allow Edits:** Has the ability to add, change, and remove values for the attribute, but subject to the editability rules.
 - **Required:** Requires a value for the attribute. The **Required** option is available for Assignees and Approvers. Until a value is provided, Assignees are prevented from submitting, and Approvers are prevented from approving.
 - d. Click **OK**.
5. Click **OK**.
 6. See also:
 - [Setting Task Type Properties](#)
 - [Setting Task Type Parameters](#)

- [Specifying Task Type Instructions](#)
- [Specifying Task Type Questions](#)
- [Working With Task Type Rules](#)
- [Viewing Task Type History](#)

Working With Task Type Rules

Task Type Rules apply to all Tasks of the same Task Type and thus serve as a convenient mechanism to apply rules to groups of Tasks. Rules configured on the Task Type dialog propagate down to the Edit Task Dialog, appearing on the Rules tab in that dialog, in read-only form for template tasks, and copied to schedule tasks.

Available task type rules:

- **Auto Approve Task** : Automatically completes specified approvals only if specified conditions have been met.
Example of conditions that could apply to this rule: If attributes have specified values (including calculated attributes)
When conditions are satisfied, the specified approver levels are marked as complete, thus progressing workflow to the next approval level, or to Closed if no additional approval levels exist.
Auto Approve Task runs when the Task status changes to Open with Approver.
- **Auto Submit Task**: Causes a task to be submitted automatically if specified conditions are met.
When conditions are satisfied, the assignee role is marked as complete, thus progressing workflow to the first approval level, or to Closed if no approval levels exist.
Auto-Submit Task rule runs when the Task status changes from Pending to Open with Assignee.
- **Prevent Task Approval**: This rule prevents approval of a task based on attribute values, or other characteristics. This rule runs when the Approver clicks **Approve**.
- **Prevent Task Submission**: This rule prevents submission of a task based on attribute values, or other characteristics. This rule runs when the Assignee clicks **Submit**.
- **Send Email on Update**: This rule runs based on user actions on the task. Hence, you must set the conditions for the rule appropriately. The most common condition is to have a condition with the Status attribute or the Status Detailed attribute:
 - Status attribute: The only valid value that you can select is Closed. Pending, Open, and Error are all statuses that result from automated actions on the task.
 - Status Detailed attribute: The valid statuses are with the approver.

To work with task type rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Click a task type and then click **Edit**.
4. Select the **Rules** tab. You can view the following information:
 - **Order**: The order of precedence
 - **Rule**: Name of the Rule

- **Conditions:** The choice of what conditions must exist before running the rule
5. To edit a rule, on the Rules tab, click **Edit** and update:
- **Rule:** Select a rule.
 - **Description: Optional.** Explain why you configured the rule and how it should be used.
 - Message (for some rules as noted below):
 - **Message to Approver:** Define an optional message to approver in a **Prevent Task Approval** rule.
 - **Message to Assignee:** Define an optional message to assignee in a **Prevent Task Submission** rule.
 - **Approver Level:** For certain rules, select the rule for **All Levels** or select the Approver levels.

 **Note:**

The **Approver Level** must be set on the **Auto Approve Task** rule, and the **Prevent Task Approval** rule.

- Select **Create Filter** and populate the conditions section or select **Use Saved Filter**, and then select a filter. The filter selected and configured for the rule determines the conditions that trigger the rule to apply.
- For **Conditions**, select one:
 - **Use Saved Filter:** The **Condition** section displays a read-only version of the conditions associated with the saved filter.
 - **Create Filter:** The **Condition** section is enabled.

Conjunction, Source, Attribute, Operator, and Value behave as they do for the existing advanced filter feature.
- For **Filter Task**, specify on which task the conditions should be selected:
 - **Current Task**
 - **Any Predecessor**
 - **Specific Task:** Provide the **Task ID**.

 **Note:**

When you make changes to a rule definition, the additional information is added to the audit log. You can view the changes both in the **History** tab as well as the **Audit Report**.

6. See also:
- [Setting Task Type Properties](#)
 - [Setting Task Type Parameters](#)
 - [Specifying Task Type Instructions](#)
 - [Specifying Task Type Questions](#)

- [Viewing Task Type History](#)

Viewing Task Type History

The system maintains a history of Task Type actions, which you can view from the View Task Types dialog box. The History tab displays the components that were updated, the modification type, the old and new values, the user who made the modification, and the change date. The information on the History tab is read-only and cannot be changed.

To view Task Type history:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Select a Task Type and click **Edit**.
4. Select the **History** tab.
5. When you finish, click **Save and Close** or **Cancel**.

Editing Task Types

From the Task Types dialog box, you can edit Task Types. For example, you can add or delete attributes, edit parameters, add or delete questions, edit instructions, or change the order of questions.

Editing Task Types may have an effect on tasks that are created from the Task Type. For tasks in a template, the effect is immediate. Changes to the Task Type (instructions, questions, and so on), are automatically updated in tasks of that type. There is no effect if you edit a Task Type in a schedule.

To edit a Task Type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Select the Task Type that you want to edit.
4. Use one of these methods:
 - Select the **Actions** icon to the right of the Task Type, and then select **Edit**.
 - Click the **Edit** icon.
 - Right-click and select **Edit**.
5. Select the tab for the information you want to edit and edit the Task Type.
6. Click **Save and Close**.

Viewing Task Types

In Task Types, you can specify columns to display for the list of Task Types, or show all. You can reorder columns, sort columns by ascending or descending order, or change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.

3. Do one or more of the following tasks:
 - To display all columns, select **View**, then **Columns**, and then select **Show All**.
 - To display specific columns, select **View**, then **Columns**, and then select or deselect the column names.
 - To reorder columns, select **View**, and then **Reorder Columns**. Select columns and use the Up or Down arrows or drag them to change the order.
 - To sort columns, hover over a column header until the Sort icons are displayed, and then click **Sort Ascending** or **Sort Descending**.
 - To change column widths, hover over the column header dividers until the arrows display, and drag the columns to the desired width.

Searching for Task Types


You can use the Search function in the Task Types list to find Task Types. You can enter full or partial names on which to search. Using the filter bar, you can control the task types that you see in the list. By default, all task types are displayed.

To search for task types:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. To search for a task type, enter search criteria in the **Search** text box.
4. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals**, **Does Not Equal**, **Contains**, **Does Not Contain**, **Starts With**, and **Ends With**.

You can filter task types using these categories: **Name**, **Task Type ID**, **Integration**, **Execution Type**, **Created By**, **Created On**, **Description**, **Last Updated By**, **Last Updated On**, and **User Created**.

Note:

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click the  icon, and then click **Clear All Filters**.

Importing Task Types

You can import Task Types or partial Task Type information from text files. The process is similar to importing tasks into a template.

Note:

Task Type rules cannot be imported. Use Migration to import Task Type rules.

To import Task Types, you must have the Service Administrator or Power User security role.

To import Task Types:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Click **Actions**, and then **Import**.
4. Click **Choose File** and navigate to the file.
5. Select an **Import Type**:
 - **Replace**: Completely replaces the definition of a Task Type with the definition in the import file. This option replaces all Task Type detail with the information that is in the file that you are importing. It does not affect Task Types that are not specified in the import file.

The system displays a warning that task types matching a task type ID in the import file will be modified. If you do not want to overwrite the task type, click **Cancel**.

 **Note:**

You can select the **Keep Attachments** checkbox to retain attachments to task types that are being replaced.

- **Update**: Updates partial information for Task Types. This option is not a full replacement of the Task Type details. Only details for the Task Type properties specified in the file are updated.
6. Select a **Date Format**.

Select a format from the drop-down list of allowed date formats. Date formats are not translated. By default, the date format is set to the locale date format of the exported file location.
 7. Select a **File Delimiter** for the import file. Choose **Comma**, **Tab**, or choose **Other** to specify any single character for the **Other Delimiter**.
 8. Click **Import**.

Exporting Task Types

You can export Task Types to a comma-separated values (CSV) file, which can be read by Excel, then modified and reimported.

 **Note:**

Task Type rules can't be exported. Use Migration to export Task Type rules.

To export Task Types:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Select one or more task types, click **Actions**, and then select **Export**.
4. In the **Export Task Types** dialog, select from the following export options:

- For **Rows**, select **All Task Types** or **Selected Task Types**.
 - For **Format**, select **Formatted data** or **Unformatted data for future import**.
5. Click **Export**. The file is downloaded in Excel or CSV format depending on the selection: **Formatted data** or **Unformatted data for future import**.
 6. Click **Close** to close the Export Task Types dialog.

Deleting Task Types

You can delete Task Types that you no longer need. To delete a Task Type, you must have Service Administrator or Power User security rights.



Note:

You cannot delete a Task Type if tasks belong to it.

To delete a Task Type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Select the Task Type that you want to delete.
4. Use one of these methods:
 - Select **Actions**, and then **Delete**.
 - Click the **Delete** icon.
 - Right-click and select **Delete**.
5. At the confirmation prompt, click **Yes**.

Managing Task Templates

A task template defines a repeatable set of tasks required for a business process. It is used as a basis for creating schedules. You can create templates for different types of processes.

Template tasks are not assigned to specific days on a calendar, but are defined using generic days, for example, day-3, day-2, day-1, day 0, based on the process activities. You apply the task flow defined in the template to calendar dates when you create schedules.

If you are a Service Administrator or Power User, you can view, create, edit, and delete templates.



Note:

The maximum number of task templates that you can create or import is 10,000.

Creating Task Templates

You can create templates for specific tasks in a business process.

When you create a template, you can assign users or groups as viewers.

Watch this video to learn more about creating task templates.



[Creating Task Templates.](#)

To create a template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Click **New**.
4. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)
 - [Specifying Template Instructions](#)
 - [Assigning Viewers to Templates](#)
 - [Applying Template Attributes](#)
 - [Specifying Day Labels](#)
 - [Embedding Templates](#)
 - [Working With Template Rules](#)

Setting Template Properties

The Properties tab enables you to specify the template name, description, owner, and time span.

You must assign a template owner to every template, which must be a Service Administrator or Power User. The current ID is the default owner. The template owner is also the default owner of all tasks in the template unless overridden at the task level.


Tasks in a template are organized by numeric template days. Each template has a Day Zero. You can specify the number of days a template tracks before and after the Zero day. Days before Day Zero are represented as Day-5, Day-4, and so on. Days after Day Zero are represented as Day 3, Day 4, and so on. A template has at least one day (Day Zero), even if you do not specify days before or after it.

To set template properties:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From the **New** or **Edit Template** dialog, on the **Properties** tab, enter:
 - **Name:** You can enter a maximum of 80 characters.
 - **Description:** You can enter a maximum of 255 characters.
 - **Organizational Unit**
4. Enter the time span for the template.
 - For **Number of Days Before Day 0**, select a number.
 - For **Number of Days After Day 0**, select a number.

5. **Optional:** Select **Embedded Only** if the template is only to be used as an embedded template.

If this option is enabled, the template is not allowed to be deployed. This prevents supporting templates from being deployed by mistake.

6. For **Owner**, use the default owner or click **Select Owner** . Administrators, or Power Users configured with the Administrator or Power User roles are the only roles that will display when you click **Search** to select a user to assign as an Owner. Any member of the Shared Services group can perform the role, but the same person cannot perform more than one role.
7. Enter the necessary information in the template sections:
 - [Specifying Template Instructions](#)
 - [Assigning Viewers to Templates](#)
 - [Applying Template Attributes](#)
 - [Specifying Day Labels](#)
 - [Embedding Templates](#)
 - [Working With Template Rules](#)

Specifying Template Instructions

You can specify instructions in the template for completing the business process. Users can view the instructions from tasks in the template. The instructions are also transferred to each schedule.

You may want to supply additional detail to help users understand the purpose of the template and how to complete the tasks. You can attach additional references.

You can easily see if a task includes instructions within the Schedule Task and Template Task lists. You can add the Instructions column to your list view and see the textual instructions for the task.

To specify template instructions:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From the New or Edit Template dialog, select the **Instructions** tab.
4. In **Instructions**, enter instruction text for each task in the template to include.
5. Click **OK**.

To add a reference:

1. In the **References** section, click **Add**.
2. From the **Reference Type** list, select one of these types:
 - **Local File:** Click **Choose File** to select and attach the file, enter a name, and click **OK**.
 - **URL:** Enter the URL, then enter a URL name; for example: <http://www.oracle.com>., Oracle, and then click **OK**.
3. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)

- [Assigning Viewers to Templates](#)
- [Applying Template Attributes](#)
- [Specifying Day Labels](#)
- [Embedding Templates](#)
- [Working With Template Rules](#)

Assigning Viewers to Templates

The Viewers tab enables you to assign viewer rights to users who may view tasks in the schedule and schedule tasks that are generated from the template. You can assign multiple users to a template as viewers. Viewers can be a team or group assignment. A Power User viewer can view the template details and template tasks as read-only. A Viewer has no template access, and only read-only access to schedules produced from the template.



Note:

Only users who have the task Viewer role can respond to questions.

To assign viewer rights:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From the New or Edit Template dialog, select the **Viewers** tab.
4. Click **Add**.
5. To search by users or groups, click **Search Users**, then select **Users** or **Groups**.
6. Enter a full or partial user name, then click **Search**.
7. To specifically identify a user, click **Advanced**, then enter a **User ID** or **Email** address.
8. From the **Search Results** list, select users, then move them to the **Selected** pane.
9. For additional details about the user, such as groups or roles, click **Details**.
10. Click **Add** or **Add All** to move users to the **Selected** list.



Tip:

To remove users, select them, and then click **Remove** or **Remove All**.

11. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)
 - [Specifying Template Instructions](#)
 - [Applying Template Attributes](#)
 - [Specifying Day Labels](#)
 - [Embedding Templates](#)
 - [Working With Template Rules](#)

Applying Template Attributes

To locate templates in the system, you can apply attributes to the template. When you select an attribute, you can set a value for the attribute based on the attribute type. You can later filter by the attribute value.

For example, you may have a List attribute named Sales Region with the values of North, South, East, and West. The current template applies only to the West Sales Region, so you can add the Sales Region attribute and set it to "West".

To apply an attribute:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From the **New Template** or **Edit Template** dialog, select the **Attributes** tab.
4. Click **Add**.
5. From the **Attribute** list, select an attribute. The **Type** field is not editable; it's populated by the Attribute.
6. For **Value**, depending on the attribute, select a value for the attribute from a drop-down list, or enter a value.
7. Click **OK**.
8. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)
 - [Specifying Template Instructions](#)
 - [Assigning Viewers to Templates](#)
 - [Specifying Day Labels](#)
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Specifying Day Labels

You can customize the names of days in the template. Editing the name of the day does not change its sequential order.

Day Labels created in a template are copied to any schedule created from the template.

To specify day labels:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From the **New Template** or **Edit Template** dialog, select the **Day Labels** tab.
4. Select a day to rename.
5. Rename the day from its default value to a custom name. You can enter a maximum of 20 characters.
6. Click **OK**.
7. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)

- [Specifying Template Instructions](#)
- [Assigning Viewers to Templates](#)
- [Applying Template Attributes](#)
- [Embedding Templates](#)
- [Working With Template Rules](#)

Embedding Templates

You can reuse tasks from one task template in another by embedding one template into another template. When you schedule tasks for a template, tasks for embedded templates are also scheduled.

For example, you may have two processes that are essentially the same, with some additional tasks for one of the processes. You can specify that one template embeds the second template so if you change one template, you do not need to update the other one. When you generate a schedule, it will include the tasks from the other template.



Note:

Only one level of embedding is possible. For example, if Template A is embedded in Template B, then Template B cannot be embedded in another template.

Embedded templates are task templates that are not designed to be deployed directly, but rather to be used by other templates that are directly deployed. The Manage Templates screen includes these columns to identify embedded templates:

- **Embedded:** a list of templates that are embedded in the current template. Blank if none.
- **Embedded In:** a list of templates that the current template is embedded in. Blank if none.

The columns are not displayed by default, but are available from the View menu.

To embed templates:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. To identify previously embedded templates, click **View**, then **Columns**, and then select **Embedded In** or **Embedded Templates**.
4. From the **New Template** or **Edit Template** dialog, select the **Embedded Templates** tab.
5. From the **Available Templates** list, select a template to embed.
6. Click **Move** to move the template to the **Embedded Templates** list.



Tip:

To remove a template or templates, select the template from the **Embedded Templates** list and click **Remove** or **Remove All** to move it to the **Available Templates** list.

7. Click **OK**.

8. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)
 - [Specifying Template Instructions](#)
 - [Assigning Viewers to Templates](#)
 - [Applying Template Attributes](#)
 - [Specifying Day Labels](#)
 - [Working With Template Rules](#)

Working With Template Rules

Template rules apply to all tasks in the template, and rules are also applied to groups of tasks. Rules that you configure in the **Template** dialog box apply to the **Schedule** dialog box and the **Edit Task** dialog box, and they are displayed on the **Rules** tabs, in read-only form.

Template rules:

- **Auto Approve Task:** Automatically completes specified approvals if specified conditions have been met.

Examples of conditions that could apply to this rule:

- Attributes have specified values (including calculated attributes)
- Predecessor task contains an attribute with a specified value

When conditions are satisfied, the rule causes the specified approver levels to be marked as complete, and workflow progresses to the next approval level or is closed if no additional approval levels exist.

This rule runs when the Task status changes to Open with Approver.

- **Auto Submit Task:** Automatically submits a task if specified conditions are met.

When conditions have been satisfied, the rule causes the assignee role to be marked as complete, thus progressing workflow to the first approval level, or to Closed if no approval levels exist.

Note:

- Auto Submit Task runs when the Task status changes from Pending to Open with Assignee. Auto Submit Task rule honors predecessor relationship. It will only run when Finish-To-Finish predecessors have completed without error and Finish Error-To-Finish predecessors have completed. When a Finish-To-Finish predecessor is Closed by either user or rules, it should check for its Running successors and trigger Auto Submit Task rules if necessary.
- Auto Submit Task rule is not triggered when the task has missing parameters.

- **Prevent Task Approval:** This rule prevents approval of a task based on attribute values, or other characteristics. This rule runs when the Approver clicks **Approve**.
- **Prevent Task Submission:** This rule prevents submission of a task based on attribute values, or other characteristics. This rule runs when the Assignee clicks **Submit**.

To work with template rules:

1. On the Home page, click **Application**, then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Open a template.
4. Select the **Rules** tab. You can view the following information about the rules that are associated with a template:
 - **Order**: The order of precedence
 - **Rule**
 - **Conditions**: The conditions that must exist before running the rule
5. To create or edit a rule, on the **Rules** tab, click **New** or **Edit** and update:
 - **Rule**: Select a rule.

 **Note:**

When you make changes to a rule definition, the additional information is added to the audit log. You can view the changes both in the **History** tab as well as the **Audit Report**.

- **Description: Optional.** Explain why you configured the rule and how it should be used. You can enter a maximum of 255 characters.
 - **Approver Level:** Select **All Levels** or select the Approver levels.
 - Select **Create Filter** and populate the conditions section or select **Use Saved Filter**, and then select a filter. The filter selected and configured for the rule determines the conditions that trigger the rule to apply.
 - **Conditions:**
 - **Use Saved Filter:** The **Conditions** section displays a read-only version of the conditions associated with the saved filter.
 - **Create Filter:** The **Conditions** section is enabled and you can click **Create Condition** or **Create Condition Group** to specify conditions.
Conjunction, Source, Attribute, Operator, and Value behave as they do for the existing advanced filter feature.
 - **Filter Task:** Specify for which task the condition should be selected:
 - **Current Task**
 - **Any Predecessor**
 - **Specific Task:** Provide the **Task ID**
6. To delete, duplicate, or reorder a rule, click the appropriate button and follow the instructions.
 7. Enter the necessary information in the template sections:
 - [Setting Template Properties](#)
 - [Specifying Template Instructions](#)
 - [Assigning Viewers to Templates](#)
 - [Applying Template Attributes](#)
 - [Specifying Day Labels](#)

- [Embedding Templates](#)

Viewing Template History

The system maintains a history of template actions, which you can view from the Template dialog box. The History tab displays the components that were created or updated, the modification type, the old and new values, the user who made the modification, and the change date. The information on the History tab is read-only.

To view template history:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select a template for which to view history and click **Edit**.
4. Select the **History** tab.
5. Click **OK**.

Opening Templates

You can open and work with templates from the Templates dialog box.

To open a template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From **Templates**, select a template.
4. Use one of these methods:
 - Click the **Actions** icon to the right of the template, and then select **Edit**.
 - Click the template.
 - Right-click and then select **Edit**.

Adding Tasks to Templates

You can add tasks to Task Manager templates. Each task has a start date and time. End-User tasks also have an end date and time when added to a template. The start day in a template corresponds to template days, rather than to calendar days.



Note:

The maximum number of tasks that you can add to a Task Manager template is 500,000.

To add a task to a Task Manager template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select and open a template.

If you have a large list of templates, enter a full or partial name in the **Search** box to search for templates from a list in the selection dialog.

4. Add tasks as required.
5. Click **OK**.

Editing Templates

You can edit Task Manager templates to change the properties, such as the name of a template and the number of days before and after Day Zero. If you reduce the number of days before or after the Day Zero, tasks associated with those days are removed. Editing a template has no effect on schedules previously generated from that template.

You can edit, copy, and delete tasks in a template.

You must be working in the source template to edit tasks from embedded templates.

To edit a Task Manager template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select a template and click **Edit**.
4. Edit the template properties.
5. Click **OK**.

Importing Tasks into Templates

You can import tasks, or partial task data, from text files such as a Microsoft Excel spreadsheet, into a template. For example, you can enter task definitions as rows in Excel, save the file as a comma-separated values (CSV) file, and then import it into a template. You can also use the Import feature to quickly add many repetitive tasks by editing the fields in a text file and importing it, rather than creating individual tasks.

Note:

Before you import tasks into a template, you must specify task IDs that are unique in the template to ensure that no two tasks have the same ID.

To import tasks, you must have security rights to edit the template.

These options are available for importing tasks into a template:

- **Replace:** Replaces the definition of a task with the definition in the import file. This option replaces the task detail with the detail that is in the file that you are importing. It does not affect other tasks in the template that are not specified in the import file.
- **Update:** Updates partial information for tasks. For example, in the import file, you might have made changes to task instructions, reassigned Owners, Assignees, and Approvers, or removed some attributes and added new attributes. You might also have made the same change to a large number of tasks, for example, adding a new attribute to 100 of 400 tasks. The update option is not a full replacement of the task details. Only details for the task properties specified in the file are updated. For example, if the import file has only a

column for a task instructions, the task name, Assignee, attributes, and other properties are not affected.

- **Delete:** Deletes tasks and associated information based on a list of task IDs provided in a file. The required information to perform a delete is a file with a column of task IDs.

To import tasks into a template:

1. On the Home page, click **Application**, and then click **Task Manager**,
2. Click the **Templates** tab on the left.
3. Select a template into which to import tasks.
4. Click **Import Tasks**.
5. Enter the name of the file to import, or click **Choose File** to find the file.
6. Select an import option:
 - **Replace:** Replaces the definition of a task with the definition in the import files. It does not affect other tasks that are not specified in the import file.

 **Note:**

You can select the **Keep Attachments** checkbox to retain attachments to tasks that are being replaced.

- **Update:** Updates partial information for tasks. For example, in the import file, you might have made changes to task instructions, reassigned Owners, Assignees, and Approvers, or removed some attributes and added new attributes. You might also have made the same change to a large number of tasks, for example, adding a new attribute to 100 of 400 tasks. The update option is not a full replacement of the task details. Only details for the task properties specified in the file are updated. For example, if the import file has only a column for a task instructions, the task name, Assignee, attributes, and other properties are not affected.

 **Note:**

The system displays a warning that tasks in the template that match a task ID in the import file will be modified. If you do not want to overwrite the task, click **Cancel** to cancel the import process.

- **Delete:** Deletes tasks and associated information based on a list of task IDs provided in a file. The required information to perform a delete is a file with a column of task IDs.
7. Select a **Date Format**.
Select a format from the drop-down list of allowed date formats. Date formats are not translated. By default, the date format is set to the locale date format of the exported file location.
 8. Select a **File Delimiter** for the import file. Select **Comma** or **Tab**. Select **Other** to specify any other single character as the **Other Delimiter**.
 9. Click **Import**.
 - If the import is successful, the Import Success dialog box is displayed, indicating the template name, the name of the file containing the tasks, and the total number of tasks imported. Click **OK**.

- If errors are found, the import process is not run, and the Import Errors dialog box displays errors. View the errors, then click **OK** to return to the Templates page.

Table 12-15 Troubleshooting Import Errors

Error	Resolution
Duplicate Task ID	Check for duplicate Task IDs. Task IDs must be unique within the template or schedule. See Creating Tasks .
Task Name is too long	The Task Name can contain a maximum of 80 characters. See Setting Task Properties .
Organizational Value - "Invalid Value"	The Organizational Value cannot be blank, contain bullet points or multiple lines.

Task Import File Format

The task import file enables you to specify the task information that you want to import into a template. The first row contains only the column headings that identify the data in that column, for example, TaskName. Separate rows are used to define each task.

Each task in the file must be given a unique ID in the TaskID column. You use the numeric IDs to uniquely identify predecessors and parent tasks. For example, when you enter a parent task in the Parent column, you enter the numeric ID of the task rather than the task name.

When you use the Replace or Replace All options, you can add, remove, and shift the columns but you cannot remove required columns. When you use the Update option, there are no required columns except TaskID, or TaskTypeID when you are importing Task Types. The data in each column must match the column ID in the first row.

Many column IDs may have an indeterminate amount of values. For example, a task may have many viewers. You can add parameters by modifying the ending number, for example, Viewer4, Viewer5, and so on.

The numbers that you append to the column IDs for Approvers, Questions, or References only represent the relative order with the other approvers, questions, or references. When you update these, the system matches by the name of the approver, question, or reference without regard to the number in the file format column. To replace question text, approvers, or reference names, you must use Replace mode. When you select Update mode, the system only adds a new question, approver, or reference if the file names do not match.

All Text Lookup rows in the file must match values stored in the application. For example, if you are importing Task Types, you must have specified values for them when you set up the application. For groups of column headings, if you have a certain number of one of the group, you must have the same number for other members. For example, if you have QText5, there must be a corresponding QType5.



Note:

When you need to create multiple lines of text in the import file (for example, in Instructions), use this syntax to indicate a new line: '\n'. Do not use hard returns to separate lines of text.

Column ID	Description	Type
TaskID	ID of task. Maximum of 80 characters.	Text
TaskName	Name of task	Text
TaskType	Task Type	Text Lookup
Description	Full description of task. Maximum of 1000 characters.	Text
Priority	Task priority (High, Medium, Low)	Text Lookup
StartDate	Start date, in template days (for example, -5, 0, 1, 12) For schedules, the start date must be a calendar date in the locale format.	Integer
StartTime	Start time in HH:MM (24-hour), for example: 13:00	Integer
EndDate	User tasks only, in template days (for example, -5, 0, 1, 12) For schedules, the end date must be a calendar date in the locale format.	Integer
EndTime	User tasks only, in HH:MM (24-hour), for example, 13:00	Integer
Duration	Task duration in minutes (automated tasks only)	Number
Owner	Task owner	Text Lookup
Assignee	Task Assignee (user tasks only)	Text Lookup
Active	Whether the task is active. Only applies to template import.	Boolean
StartEarly	Whether the Assignee is allowed to open a pending task prior to the scheduled start time	Boolean
RunAs	RunAs user name. Only applicable for system-automated tasks.	Text Lookup
Instruction	Instruction text. Maximum of 2 GB.	Text
Reference#	Instruction reference (URL and Content Server references)	URL
RefText#	Reference name, for URL references	Text
RefType#	Reference type (URL, Document)	Text Lookup
RefURL#	Reference URL, for URL references	URL
RefDocId#	Reference document ID, for document references	Integer
Approver#	Approver Level	User Name
Viewer#	Task viewer	User Name
QText#	Required for question. Text of question. Maximum of 255 characters.	Text
QType#	Required for question. Data type of question (Text, Member, True/False, and so on)	Text Lookup
QReq#	Required for question. Question required? (Yes or No)	Boolean

Column ID	Description	Type
QList#	List of values for question, separated by symbol, for example, Red Green Blue Yellow.	Text Lookup
QCurrSymbol#	Currency format for question X	Text
QDecPlaces#	Number of significant digits after the decimal places for question X	Number
QNegNumFmt#	Negative number format for question X	Text: - or ()
QScale#	Scale format for question X	Number, in magnitude: 1000 and so on
QThouSep#	Thousand separator indicator for question X	Boolean
Attribute#	Attribute name, for example, Color	Text Lookup
AttrVal#	Attribute value, for example, Red. Maximum of 255 characters.	Text
AttrDisplay	Display to user (in task action dialog box) for attribute	Boolean
Param#	Parameter name	Text Lookup
ParmVal#	Parameter value	Text
Parent	Task ID of the task parent	Task ID
Predecessor#	Predecessor task ID (from column A)	Task ID
PredType#	Required. Predecessor type (for example, Finish to Start).	Text Lookup
PredTemplate#	Name of the predecessor template or schedule, if the predecessor belongs to a different template or schedule	Text

When you import Task Types, these columns are used:

- TaskTypeID
- IntegrationType
- ParamOverride# - whether the parameter can be overridden

A sample task import file is provided. It contains these dynamic parameters, which you can modify:

- Two questions
- Two attributes
- Two instructional references
- Three predecessor tasks
- Three approver levels

Exporting Tasks to Microsoft Excel

You can export tasks from a template to a flat file in CSV format, then use Microsoft Excel to modify the file. For example, you can export the tasks from a template in a test installation and import them to a template in a production installation. When you export tasks from a template, they are saved to a CSV file.

To export tasks:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Click the **Tasks** tab.
4. Select one or more tasks and from the **Actions** menu, click **Export**. The file is downloaded in Excel or CSV format depending on the selection: Formatted data (visible columns only) or Unformatted data for future import.
5. Click **Close** to close the Export Tasks dialog box.

Reassigning Users in Templates

You may periodically need to reassign users to different tasks. For example, you may create a template and assign a user to certain tasks; however, later that employee leaves the company and another employee assumes those tasks. You can use the Reassign feature in the Templates dialog box to automatically change assignments instead of manually searching for, opening, and editing individual tasks. The Reassign feature enables you to quickly find the tasks associated with one user and reassign them to another.

You can reassign users for multiple templates at a time. This can be helpful if your application has a large number of templates.

You can select the roles for which to reassign users. For example, if you select the Owner role, the system reassigns the user only in tasks in which the user was assigned as the owner.

When tasks are reassigned, email notifications are sent immediately to reassigned users.

To reassign users:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select one or more templates for which you want to reassign users.
4. Select **Actions**, and then **Reassign User**.
5. For **Find User**, enter the search criteria for the user that you want to replace:
 - a. Click **Find User**, then from the **Select User** dialog box, enter the first or last name for the user, and then click **Search**.
 - b. Select the user from the results, then click **OK**.
6. Click **Replace with** and enter search criteria for the user to whom you want to reassign tasks.
7. Select roles for the user that must be reassigned:
 - **Owner**
 - **Assignee**
 - **Approver**
 - **Viewer**
8. Click **Reassign**.

When the process ends, the system displays a "Reassign Users - Success" message that indicates that the user reassignment is complete, and displays the template name and total number of user reassignments made.

Creating Schedules from Templates

You can create schedules from templates. Creating a schedule from a template populates the schedule with the tasks in the template. If the source template has embedded templates, the tasks in the embedded templates are included. Template instructions, viewers, and attributes are also added to the schedule.

You create schedules from templates from the Edit Templates dialog box. The Last Schedule column shows the last schedule created from each template. The Schedules column shows the total number of schedules created from each template.

To create a schedule from a template, you must have the Service Administrator or Power User role.

You can use REST API to create Task Schedules from Templates. This will allow you to create an automated routine to generate all of your periodic task schedules. For more information, see [Deploy Task Manager Templates](#) in *REST API for Oracle Enterprise Performance Management Cloud*.

The schedule starts in a Pending status, which gives you the opportunity to make final changes in the definition.

When template tasks are added from a template to a schedule, they are assigned calendar dates based on their relationship to the template Day Zero. The dates can also account for non-working days of the schedule if you specified them. For example, if Day 0 is a Friday, the tasks for Day 1 are placed on the following Monday if you selected to exclude weekend days. The Date Map displays the default calendar date assigned to each template day. You can use the Date Map feature to adjust the date assignments.

A task in one template can have predecessor tasks in other templates. When you create a schedule from a template, you can select predecessor tasks in schedules as predecessors for tasks with predecessors in other templates. You use the Predecessor Task Links tab to select predecessor tasks in schedules. The Predecessor Task Links tab lists all tasks with predecessors in other templates, and enables you to select a predecessor in a schedule for these tasks.

 **Tip:**

When you create a schedule from a template, you can globally update the task parameters for a Task Type if the parameters have the override option enabled. See [Setting Task Type Parameters](#).

To create a schedule from a template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select the template that you want to schedule.
4. If the template was successfully validated, create the schedule. Click the **Actions** icon **☰** on the right side, and then select **Create Schedule**, or click the **Create Schedule** icon above the listing.

On the **Schedule Parameters** tab, enter the following fields:

- **Schedule:** The name of the schedule.

- **Year:** Select the schedule year.
- **Period:** Select a period for the schedule.
- **Day Zero Date:** Select the calendar date to assign to the template Day Zero.
- **Date Mapping:**
 - **Organizational Unit**
 - **Calendar days**
 - **Working days**
 - **Advanced Configuration** dialog box:

Click **Advanced Configuration** to override the **Organizational Unit** and **Work Days** configuration for all tasks in the schedule.

 **Tip:**

You can create one global template and have that template create the proper schedules for each regional entity, taking into consideration the holiday calendars, time zones, and work day configurations of the entity.

* **Organizational Unit**

Select one:

- * **Use Task Value:** Select a value from the Organizational Unit
 - * **Set Value To:** The selected organizational unit is applied to all tasks in the Schedule (even if the task in the template contained a different Organizational Unit value). Since all tasks have the same Organizational Unit, the Organizational Unit in the Date Mapping panel on the Schedule from Template dialog box displays as Read Only.
 - * **Work Days:** If you do not assign an organizational unit to a task, and you do not use the Override Work Days feature, then the application uses the following default: Monday – Friday are working days, and Saturday and Sunday are non-working days.
- **Date Map:** For each template day whose date assignment you want to modify, in the **Date** column, enter the new date.

 **Note:**

Day Labels are applied to the dates within the **Date Mapping**. That is, whatever the template day level is, the same will be applied to the schedule for the dates that were mapped.

Day mapping may vary by Organization Unit within the Date Mapping. If there is no Organization Unit assigned to the template level, the "Unassigned" day mapping will be applied to the schedule. If the template has an Organization Unit assigned, then the day mappings for that Organization Unit will be assigned to the schedule.

For multiple days mapped to the same date, the day labels will be concatenated with comma. Non-working days will have a blank day label.

The Organization Unit drop-down list is used for Date Mapping. It contains only Unassigned and Organization Units related to the template.

The Org Unit dropdown list in Create Schedule dialog is for date mappings, not for the Organization Unit of the created schedule. It only contains the Unassigned and the Organization Unit related to the template.

5. **Optional:** Select the **Predecessor Task Links** tab, select the schedule that contains the predecessor task and in the Assigned Task list, select the predecessor task.
6. **Optional:** Select the **Override Parameters** tab, review the parameters, and for each parameter that you want to modify, in the **New Value** column, enter a new value.

 **Note:**

The **Override Parameters** tab displays only tasks that use a Task Type in which at least one parameter has the Override option enabled.

7. Click **Create Schedule**.

A schedule is created and populated with the tasks, instructions and viewers from the template. It has a status of Pending. By default the schedule is opened into a view when created.

Review the schedule and make adjustments as needed.

Using the Override Parameter Option When Creating Schedules from Templates

It's common for an integrated task to have parameters that you must update periodically. Many integrated tasks have a **Period** parameter that varies between task executions in different schedules. For example, the **Run Data Rule** integrated task's **Start Period** and **End Period** parameters may need to be modified within different schedules created from the template.

The **Override Parameter** option allows a quick way to update these parameters, which you must update periodically.

Initially, designate the integration parameters that you must update at scheduling time by selecting the **Override at Scheduling** property in the task type. For new task types, see [Setting Task Type Parameters](#). For existing task types, see [Editing Task Types](#).

For example, edit the **Run Data Rule** task type. On the **Parameters** tab, select the **Override at Scheduling** option for **Start Period** and **End Period**, and then save.

Secondly, when adding the integrated tasks to your template, select the task type and populate the required parameters. For the parameters designated for override, you can provide the default values or leave them blank. See [Adding Tasks to Templates](#).

For example, add one or more **Run Data Rule** tasks to your template by selecting the **Run Data Rule** task type. On the **Parameters** tab, enter **Jan** for **Start Period** and **Feb** for **End Period**.

Lastly, when creating a schedule from template, select the **Override at Scheduling** tab. Within the table, all parameters that are designated for an override at scheduling will be listed with their current values. You can enter a new parameter value, which will be set for all tasks using the task type.

For example, when creating a schedule from the template, the **Override at Scheduling** tab will show the Run Data Rule **Start Period** and **End Period** parameters with their current values. You can override the parameter by updating the values within the table.

Table 12-16 Override Parameters at Scheduling

Task Type Name	Parameter Name	Current Value	New Value
Run Data Rule	Start Period	Jan	Feb
Run Data Rule	End Period	Feb	Mar

When the schedule is created, the Run Data Rule tasks will be set with **Start Period** as **Feb** and **End Period** as **Mar**.

Manually Validating Templates

When you generate a schedule from a template, the system automatically validates the template first to check for uniqueness violations, tasks that directly or indirectly depend on each other, or a date-precedence mismatch. For example, you cannot have circular predecessors.

You can manually validate templates. Validation is particularly useful to check for problems after you import tasks into a template from a file.

The validation results show the template names, status, and error messages. You can sort the list of validation results by Template Name or Status.

To manually validate templates:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. From **Templates**, select one or more templates to validate.
4. Click **Validate**.

If no errors exist, the validation results show a "Template is valid" message. If errors exist, it shows the error details.

Validation results		
Template Name	Status	Message
Error Template 1	✘	The template has cyclical references for task precedence. The following tasks form a cyclical reference for task precedence. Basic Template 1 Task 2, Basic Template 1 Task 1
Error Template 2	✘	The template has cyclical references for task precedence. The following tasks form a cyclical reference for task precedence. Basic Template 2 Task 2, Basic Template 2 Task 1
Template 3	✔	Template is valid
Template 4	✔	Template is valid
Template 5	✔	Template is valid

Viewing Task Manager Templates

In the Templates dialog box, you can specify which columns to display for the list of templates, or show all. You can also reorder columns, sort columns by ascending or descending order, or change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Do one or more of the following tasks:
 - To display all columns, select **View**, then **Columns**, and then select **Show All**.
 - To display specific columns, select **View**, then **Columns**, and then select or deselect the column names.
 - To reorder columns, select **View**, and then **Reorder Columns**. Select columns and then use the Up or Down arrows or drag them to change the order.
 - To sort columns, hover over a column header until the Sort icons are displayed, and then click **Sort Ascending** or **Sort Descending**.
 - To change column widths, hover over the column header dividers until the arrows display, and drag the columns to the desired width.

Searching for Templates

You can use the Search function in a Templates list to quickly find Task Manager templates. You can enter full or partial names on which to search. Using the filter bar, you can control the templates that you see in the list. By default, all templates are displayed.


To search for templates:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. To search for a template, enter search criteria in the **Search** text box.

4. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals**, **Does Not Equal**, **Contains**, **Does Not Contain**, **Starts With**, and **Ends With**.

You can filter templates using these categories: **Name**, **Owner**, **Organizational Unit**, **Days After Day 0**, **Days Before Day 0**, **Embedded In**, **Embedded Only**, **Embedded Templates**, **Description**, **Created By**, **Created On**, **Last Updated By**, or **Last Updated On**.

 **Note:**

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click **Clear All Filters** in the  icon.

Deleting Templates

You can delete Task Manager templates that you no longer need. To delete a template, you must have security rights to the template.

Deleting a template removes it from the list of available templates and removes tasks associated with it. It does not directly affect a running schedule, however some reporting and dashboard metrics may use the template to link various schedule runs together, which are not possible if the template is deleted.

To delete a Task Manager template:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left.
3. Select the template, and click **Delete**.
4. At the confirmation prompt, click **Yes**.

Managing Tasks

Tasks are the core units of action in a business process, such as data entry or data consolidation.

Each task has different parameters depending on the Task Type. If you have Service Administrator or Power User security rights, you can create, edit, or delete tasks.

See [Creating Tasks](#).

See also: [Managing Services](#)

Creating Tasks

You can add tasks to templates or schedules. If you create a task in a template, you assign the start and end date as days before or after Day Zero. If you create a task in a schedule, you select calendar dates for the start and end dates.

You can group tasks under parent tasks to provide a simpler view of the business process. After viewing upper-level parent tasks, you can then drill into the underlying tasks. Child tasks of parent tasks may have different owners than the parent task.

You can create a task using any of these methods:

- Drag and drop the Task Type onto a template or schedule in a view.
- Right-click on a task and select **New**.

Then enter the task information:

- [Setting Task Properties](#)
- [Setting Task Parameters](#)
- [Specifying Task Instructions](#)
- [Selecting the Workflow](#)
- [Adding Task Questions](#)
- [Setting Task Viewers](#)
- [Setting Task Predecessors](#)
- [Applying Task Attributes](#)
- [Working With Task Rules](#)
- [Viewing Task History](#)

Watch these videos to learn more about creating tasks.



[Creating Tasks](#)

The following tutorial contains additional information on creating tasks:



[Viewing, Updating, and Adding Tasks in Task Manager](#)

Setting Task Properties

The Properties dialog enables you to set the task name, task ID, description, task type, priority, start and end date or duration.

You also use Properties to specify task Owners and Assignees. If an Owner or Assignee is not available to work on the task (due to sick time, vacation, has left the company, or is simply too busy), you can reassign users associated with a task, template, or schedule. Template, schedule, and task Owners, Assignees, and Approvers may also reassign their tasks.

For end-user tasks, you can allow an Assignee to open a pending task prior to the scheduled time, if all task predecessor conditions have been met.

Automated tasks have no Assignees, however you can specify Run As users for users under which tasks of that type are run.

Event Monitoring tasks have no Assignees and Run As users.

To set task properties:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left and then click the **Tasks** tab.


 **Note:**

If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. Open a task.
4. Click **Properties** and enter this information:
 - **Task Name:** Enter a maximum of 80 characters or less.
 - **Task ID:** Identifies the task (required). Task IDs must be unique within the template or schedule. You can enter a maximum of 80 characters or less.
 - **Description:** Enter a maximum of 255 characters or less.

 **Note:**

You can use carriage returns and URLs in Descriptions, Questions, and Instructions.

- **Organizational Unit:** Represents a hierarchical entity-type structure that you can use to model your organization. Define a separate organizational unit for each entity for which separate reporting is required, or for entities that require different configurations for any of the following: time zones, holidays, work days, or viewer or commentator assignments. Organizational Units are defined in system settings.
- **Task Type:** Click the magnifying glass and select a Task Type (required).
- For **Priority**, select from the following options:
 - **High**
 - **Medium**
 - **Low**
- **Owner:** Use the default owner or click **Select Owner**  to select a user or group.
- Select **Active** to include this task in schedules generated from the template.

 **Note:**

This option is not available for tasks created in schedules.

5. Click **Save and Close**.
6. See also:
 - [Setting Task Parameters](#)
 - [Specifying Task Instructions](#)
 - [Selecting the Workflow](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)

- [Setting Task Predecessors](#)
- [Applying Task Attributes](#)
- [Working With Task Rules](#)
- [Viewing Task History](#)

Setting Task Parameters

The Parameters dialog only contains data for tasks that are associated with an Integration Type and have parameters. Integration Types provide links to external applications. From Parameters, you can set specific information about the task and how it is run. The parameters are passed to the external application. For example, if the task contains a link to a data grid, you might use the Parameters dialog to select a point of view for the grid.

To set task parameters:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left and then click the **Tasks** tab.

 **Note:**

If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. From the **New Task** or **Edit Task** dialog box, click **Parameters**.
4. If the parameter values are not entered by the task type, you may enter the required parameter values.

 **Note:**

If the parameters are not defined when the task is ready to start, an email is sent to the task owner. The task waits to start until the values are provided.

5. See also:
 - [Setting Task Properties](#)
 - [Specifying Task Instructions](#)
 - [Selecting the Workflow](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)
 - [Setting Task Predecessors](#)
 - [Applying Task Attributes](#)
 - [Working With Task Rules](#)
 - [Viewing Task History](#)

Specifying Task Instructions

Task owners can create a set of instructions for completing the task. All other users who have access to the task are only able to read the instructions. If there are task instructions that are inherited from the Task Type, template, or schedule, that instruction text is displayed above the instruction text box and is read-only.

For template tasks, the Template and Task Types instructions are viewable but not editable.

To specify instructions:

1. On the Home page, click **Application** and then click **Task Manager**.
2. Click the **Templates** tab on the left, and then click the **Tasks** tab.

 **Note:**

If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. From the **New Task** or **Edit Task** dialog box, click **Instructions**.
4. Enter the **Instructions** which can have unlimited characters.

To add a reference:

1. In the **References** section, click **Add**.
2. From the **Reference Type** list, select one of these types:
 - **Local File:** Click **Choose File** to select and attach the file, enter a **Name**, and then click **OK**.
 - **URL:** Enter the **URL** and **URL Name**; for example, <http://www.oracle.com>, Oracle.
3. See also:
 - [Setting Task Properties](#)
 - [Setting Task Parameters](#)
 - [Selecting the Workflow](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)
 - [Setting Task Predecessors](#)
 - [Applying Task Attributes](#)
 - [Working With Task Rules](#)
 - [Viewing Task History](#)

Selecting the Workflow

To select the Task Manager workflow:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left and then click the **Tasks** tab.

 **Note:**


If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. From the **New Task** or **Edit Task** dialog box, click **Workflow**.
4. The Workflow section contains the Assignee and Approver assignments.

 **Note:**

You cannot assign the same user to multiple roles within the workflow.

Enter this information for the Assignee:

- **Assignee:** To select to assign an Assignee to a named user or Shared Services Group, click  .

The "Actual" attribute is available for each workflow stage, showing the actual user for the completed workflow, for example **Assignee (Actual)**. In the workflow, the **Actual** column shows who performed work on the task, regardless of the user status.

 **Note:**

The additional user information only appears if the task is reassigned after it was completed by the initial user.


For an End-User task, for **Assignee**, click **Select Assignee**  to find a user.

If you do not select an Assignee, the owner becomes the default Assignee. Parent and automated tasks have no Assignees.

 **Note:**

For a Process-Automated task, click **Run As**, search for and select a user under which tasks of this type are run, and click **OK**.

If the selected **Run As** user is the user who also created the task, then the user can authorize the task, without being prompted to re-enter their password.

- **Backup:** If you assigned a user for the primary Assignee, you can assign a backup user authorized as an Assignee:
 - a. Click **Backup**  .
 - b. Enter the **First Name** and **Last Name** or click **Search** to select a backup user.
 - c. Click **OK**.

- **Starts:** Select a start date, then select the time of day, in increments of 15 minutes, for the task to start.
- **Ends:** Select an end date, then select the time of day, in increments of 15 minutes, for the task to end.
- **Optional:** For **Minimum Duration**, enter the minimum duration of a task in the form of **Day(s)**, **Hour(s)**, and **Minute(s)**. An At Risk criteria is based on the condition if the Start date was missed **and** (the End_date minus the Current_date is less than the minimum task duration **or** the End_Date minus the Start_Date is less than the minimum duration). The At Risk tasks display in the Needs Attention Graph in the Status Chart of the Dashboard.
- **Optional:** For an End-User task, select **Allow Early Start** to allow the Assignee to open the task before the scheduled start time.

Enter this information for the Approver:

- **Level**
- **Name**
- **Backup**
- **End Date**

5. See also:

- [Setting Task Properties](#)
- [Setting Task Parameters](#)
- [Adding Task Questions](#)
- [Setting Task Viewers](#)
- [Setting Task Predecessors](#)
- [Applying Task Attributes](#)
- [Working With Task Rules](#)
- [Viewing Task History](#)

Adding Task Questions



Note:

The Questions tab is not displayed for automated tasks or parent tasks.

When you create a task, you may want the Assignee to answer questions about their actions before they indicate a task is complete. For example, you may ask if a certain process was followed when completing that task.

You can specify questions on the task. You can specify various types of questions, such as Text, Number, or True/False, and indicate whether they are required. If a question is required, the user must respond or they cannot submit the task for approval. You can also order the questions by using the Move Up and Move Down buttons.

For schedule tasks, users can respond to the questions from the Task Actions page. If you are creating or updating a task in a template, an additional column displays, showing whether the row is locked or unlocked to indicate whether the user can remove or update the questions.

Rows that are locked cannot be edited or deleted because they are inherited from the Task Type.

In templates, the Task Type questions are displayed, but are not editable.

**Note:**

Only users who have the task Viewer role can respond to questions.

To add a question:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left, and then click the **Tasks** tab.

**Note:**

If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. From the **New Task** or **Edit Task** dialog box, click **Questions**.
4. Click **Add**.
5. Enter the **Question** with a maximum of 2000 characters or less.
6. For **Type**, select from the following options:
 - **Date**
 - **Date/Time**
 - **Integer**: Enter a value between -2147483648 and 2147483647.
 - **List**: Enter a list of valid responses to the question (up to 255 characters).
 - **Multi-Line Text**: Enter the **Number of Lines**, from 3 to 50 lines. Enter a maximum of 4000 characters. Multi-Line Text determines how many lines of text are visible without scrolling, on the Actions dialog boxes. Select **Attachments** if you want to include an attachments section.
 - **Number**: Enter a value xxxxxxxxxxxxxxxxxxxx.xxxxxxxxx (17 digits and 9 decimal places).

Select number formatting options:

- For **Decimal Places**, enter a value for the number of decimal places to display.
- For **Display As Percentage**, check the box if you want a percentage to display.
- Select the **Thousands Separator** option if you want numbers to display a thousands separator (for example, 1,000.00).
- For **Currency Symbol**, select a currency symbol; for example, \$ (United States of America Dollar).
- For **Negative Number**, select how to display negative numbers; for example, (123).
- For **Scale**, select a scale value for numbers; for example, 1000 or 1000000000000.
- **True/False**

- **Text:** You can enter a maximum of 4000 characters.
 - **User**
 - **Yes/No**
7. Assign a **Role (Assignee, Approver, Owner, Viewer)** to the question. Access is based on responsibilities.
 8. If the question is required, select **Required**.
The **Required** checkbox is disabled for Questions assigned to Owner or Viewer roles.
 9. Click **OK**.
 10. **Optional:** To change the order of questions, select a question, then click **Move To Top**, **Move Up**, **Move Down**, or **Move To Bottom**.
 11. **Optional:** To edit a question, select the question and click **Edit**. To remove a question, select the question and click **Delete**.
 12. See also:
 - [Setting Task Properties](#)
 - [Setting Task Parameters](#)
 - [Specifying Task Instructions](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)
 - [Setting Task Predecessors](#)
 - [Applying Task Attributes](#)
 - [Working With Task Rules](#)
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Setting Task Viewers

The Viewers tab enables you to add or remove Viewers for the current task. You can specify an unlimited number of viewers.

To set task access:

1. From the **New Task** dialog box, select the **Viewers** tab.
2. Enter the first or last name of the user, then click **Search**.

To specifically identify a user, click **Advanced**, then enter a **User ID** or **Email** address.



Tip:

For additional details about the user, such as groups and roles, click **Details**.

3. To remove a user from the Viewers list, select the user, then click **Remove**.
4. See also:
 - [Setting Task Properties](#)
 - [Setting Task Parameters](#)
 - [Specifying Task Instructions](#)

- [Selecting the Workflow](#)
- [Adding Task Questions](#)
- [Setting Task Predecessors](#)
- [Applying Task Attributes](#)
- [Working With Task Rules](#)
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Setting Task Predecessors

The Predecessors tab enables you to set predecessors for the current task. For template tasks, you can choose a predecessor from another template, and for schedule tasks, you can choose a predecessor from another schedule. You must assign a condition to the predecessor/successor relationship.

A task does not need predecessor tasks as long as a start date and time is specified. If both are specified, the task begins when the predecessor tasks are started or complete (for Finish to Start) and the start date and time is reached.

You can set these conditions under which the predecessor relationship is established:

Condition	Description
Finish to Start	Default. The task starts as soon as the predecessor task completes or finishes with warning.
Finish Error to Start	The task starts as soon as the predecessor task completes, even if it is in error.
Finish Error to Finish	The task completes as soon as the predecessor task completes, even if it is in error.
Finish to Finish	The task cannot be marked as Complete until the predecessor task is marked as complete. This is primarily used for user tasks. For example, a user can start a document summary, but cannot mark it complete until the consolidated data is final.

To set task predecessors:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Templates** tab on the left and then click the **Tasks** tab.

Note:

If you've enabled the Redwood Experience, the **Tasks** tab displays at the bottom of the page instead of at the top.

3. From the **New Task** or **Edit Task** dialog box, select the **Predecessors** tab.
4. Click **Add**.
5. To search for a Predecessor task, click **Expand Search**, enter the **Task Name**, then click the **Search** button. To refine the search, click **Advanced**, and enter advanced search criteria.
6. Select a predecessor task(s) and click **OK**.

7. See also:
 - [Setting Task Properties](#)
 - [Setting Task Parameters](#)
 - [Specifying Task Instructions](#)
 - [Selecting the Workflow](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)
 - [Applying Task Attributes](#)
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Applying Task Attributes

To locate tasks in the system, you can apply attributes to the task. When you select an attribute, you can set a value for the attribute based on the attribute type. You can later filter by the attribute value.

For example, you may have a List attribute named Sales Region with the values of North, South, East, and West. The current task applies only to the West Sales Region, so you can add the Sales Region attribute and set it to "West".

To apply task attributes:

1. Open a task and select the **Attributes** tab.

Click **Add**, then enter the following:

- **Attribute:** Select an attribute from the list of defined attributes.
- **Type:** This field is not editable; it is populated by the Attribute.
- **Value:** Select a value associated with the type of attribute; for example, a numeric value for Formatted Number attribute, a List for List attribute, multiple lines of displayed text without scrolling for Multi-Line Text, a name of a person, User, or Yes or No for the Yes/No attribute.
- **Access:** All roles have view access unless otherwise specified below.

To add an access, for each of the Text Box and Attachments tabs:

- a. Click **Add**.
- b. Select a role.
- c. Select one of the Role access types:
 - **Do Not Display:** Does not see this attribute in any of the dashboards, list views, or reports.
 - **Allow Edits:** Has the ability to add, change, and remove values for the attribute, but subject to the editability rules.
 - **Required:** Requires a value for the attribute.

2. Click **OK**.

3. See also:

- [Setting Task Properties](#)

- [Setting Task Parameters](#)
- [Specifying Task Instructions](#)
- [Selecting the Workflow](#)
- [Adding Task Questions](#)
- [Setting Task Viewers](#)
- [Setting Task Predecessors](#)
- [Working With Task Rules](#)
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Working With Task Rules

Task rules affect task behavior. These rules enable users to assign rules directly to tasks, especially when, because a rule is unique to a task, assigning rules isn't appropriate at the Template, Schedule, or Task Type level. These rules apply to the Tasks for which the rules were configured.

Available task rules:

- **Auto Approve Task:** Automatically completes specified approvals only if specified conditions have been met.

Examples of conditions that could apply to this rule include:

- Attributes have specified values (including calculated attributes)
- Predecessor task contains an attribute with a specified value

When conditions are satisfied, the specified approver levels are marked as complete, thus progressing workflow to the next approval level, or to Closed if no additional approval levels exist.

This rule runs when the Task status changes to Open with Approver.

- **Auto Submit Task** - Automatically submits a task if specified conditions are met.

When conditions are satisfied, the assignee role is marked as complete, thus progressing workflow to the first approval level, or to Closed if no approval levels exist.

This rule runs when the Task status changes from Pending to Open with Assignee.

- **Prevent Task Approval:** Prevents approval of a task based on attribute values, or other characteristics. This rule runs when the Approver clicks **Approve**.
- **Prevent Task Submission:** Prevents submission of a task based on attribute values, or other characteristics. This rule runs when the Assignee clicks **Submit**.
- **Send Email on Update:** This rule runs based on user actions on the task. Hence, you must set the conditions for the rule appropriately. The most common condition is to have a condition with the Status attribute or the Status Detailed attribute:
 - Status attribute: The only valid value that you can select is Closed. Pending, Open, and Error are all statuses that result from automated actions on the task.
 - Status Detailed attribute: The valid statuses are with the approver.

To work with task rules:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select the **Rules** tab to open a New Rule. You can view the following information:

- **Order:** The order of precedence.
 - **Rule:** Name of the Rule
 - **Conditions:** The choice of what conditions must exist before running the rule
3. Under **Rule**, select the type of rule you want to use:
 - **Auto Approve Task**
 - **Auto Submit Task**
 - **Prevent Task Submission**
 - **Prevent Task Approval**
 - **Prevent Task Rejection**
 - **Send Email on Update**
 - Select **Create Filter** and populate the conditions section or select **Use Saved Filter**, and then select a filter. The filter selected and configured for the rule determines the conditions that trigger the rule to apply.

 **Note:**

When you make changes to a rule definition, the additional information is added to the audit log. You can view the changes both in the **History** tab as well as the **Audit Report**.

4. **Optional:** Under **Description**, explain why you configured the rule and how it should be used.
5. For **Approver Level**, select the rule for **All Levels** or select the Approver levels.
6. Select the Filter to determine the conditions that trigger the rule to apply:
 - **Use Saved Filter:** The Condition section displays a read-only version of the conditions associated with the saved filter.
 - **Create Filter:** The **Condition** section is enabled. Select the conditions that apply for the advanced filter: **Conjunction**, **Source**, **Attribute**, **Operator**, and **Value**.
7. Under **Filter Task**, select the task to which the conditions should be applied: **Current Task**, **Any Predecessor**, **Specific Task** (provide the **Task ID**).
8. See also:
 - [Setting Task Properties](#)
 - [Setting Task Parameters](#)
 - [Specifying Task Instructions](#)
 - [Selecting the Workflow](#)
 - [Adding Task Questions](#)
 - [Setting Task Viewers](#)
 - [Setting Task Predecessors](#)
 - [Applying Task Attributes](#)
 - [Viewing Task History](#)

Viewing Task History

For each task, the system retains a history of the changes made to it; for example, a shift in dates or change in ownership. Each change record includes the field, modification type such as added, created, or changed, the old and new values, the user who made the change, and the date on which the change was made. The information on this tab is read-only.

To view task history:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a task.
3. Select the **History** tab on the right.
4. When you finish, click **Save and Close**.

Working with the Task Dialog Box

You can view a list of tasks from the Schedule Tasks page. You can filter the available schedule list by date or status.

To view the Tasks from the Schedule Tasks page:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. For **Schedule**, select a schedule, or select **All** if you do not want to filter the list.
3. **Optional:** To filter the schedule list by year or period, select a **Year** and **Period**.
4. **Optional:** To filter the schedule list by status, from **Schedule Status**, select a status.
5. Select a task.
6. Click the **Properties** tab on the right to view the following fields:
 - **Name**
 - **Task ID**
 - **Status**
 - **Schedule**
 - **Priority**
 - **Task Type**
 - **Task Type**
 - **Description**
 - **Owner**
 - **Start Date**
 - **End Date**
 - **Duration**
 - **Actual Start Date**
 - **Actual End Date**
 - **Actual Duration**
7. Click **Instructions** to display any instructions.

8. Click **Alerts** to display current alerts.
9. Click **Workflow** to view assignees for the task.
10. Click **Attributes** to view any attributes for the task.
11. Click **Questions** to view any questions that have been posted for the task.
12. Click **Comments** to view any comments that have been posted for the task.
13. Click **Related Tasks** to view any related tasks. You can view Predecessors or Successor tasks.
14. Click **Parameters** to view dashboard, cluster, application, and so on.
15. Click **History** to capture an audit trail of changes to the task. You can view the activity for the task, including **All Activity**, **Last 7 Days**, and **Today**.
16. Click **Actions**, then select one of the following actions:
 - **Submit Task**
 - **Abort Task**: Cancels a task. The purpose of canceling a task (instead of performing a forced close) is to prevent successors from continuing and to keep the process moving.
 - **Force Close Task**
 - **Refresh**
17. Click **Close**.

Importing and Exporting Tasks

Importing Tasks

To import tasks:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a task, click **Actions**, and then **Import Tasks**.
3. Click **Browse** to find the import file.
4. Select an **Import Type**:
 - **Replace**: Replaces the definition of a task with the definition in the import file. This option replaces the task detail with the detail that is in the file that you are importing. It does not affect other tasks in the schedule that are not specified in the import file.

The system displays a warning that tasks in a schedule that match a task ID in the import file will be modified. If you do not want to overwrite the task, click **Cancel**.

You can select the **Keep Attachments** checkbox to retain attachments to tasks that are being replaced.
 - **Update**: Updates partial information for tasks. For example, in the import file, you might have made changes to task instructions, reassigned Owners, Assignees, and Approvers, or removed some attributes and added new attributes. You might also have made the same change to a large number of tasks, for example, adding a new attribute to 100 of 400 tasks. The update option is not a full replacement of the task details. Only details for the task properties specified in the file are updated. For example, if the import file has only a column for a task instructions, the task name, assignee, attributes, and other properties are not affected.

- **Delete:** Deletes tasks and associated information based on a list of task IDs provided in a file. The required information to perform a delete is a file with a column of task IDs.
5. Select a **Date Format**.
Select a format from the drop-down list of allowed date formats. Date formats are not translated. By default, the date format is set to the locale date format of the exported file location.
 6. Select a **File Delimiter** for the import file: **Comma** or **Tab**. Choose **Other** to specify any single character as the **Other Delimiter**.
 7. Click **Import**.

Exporting Tasks

To export tasks:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a task, click **Actions**, and then select **Export Tasks**.
3. Select Export options:
 - Select **All Tasks** or **Selected Tasks**.
 - For **Format**, select **Formatted data (visible columns only)** or **Unformatted data for future import**.

Note:

If you are an Administrator or Power User, you can select the format. If you have User security rights, by default the Format option is **Formatted data (visible columns only)**, and it cannot be changed.

4. Click **Export**. The file is downloaded in Excel or CSV format depending on the selection: Formatted data (visible columns only) or Unformatted data for future import.
5. Click **Close**.

Editing Tasks

You can edit tasks depending on their status and your security rights. For example, you can edit a task description, attributes, or end date.

For an Open task in a Task List, you cannot edit the start date, because the task has started. You can only change the duration or the end date. You also cannot edit instructions, questions, Assignee, or approver, and you cannot add, delete, or edit predecessors. You can reassign the Assignee or approver from the Task Actions workflow.

To edit a task:

1. On the Home page, click **Tasks**, and highlight the task that you want to edit. The **Edit** icon is enabled.
2. Click the **Edit** icon.
3. To edit task attributes:
Click the **Attributes** tab.

To add an attribute, click the **Add** icon to display the **Add Attribute Assignment** dialog box, and then make the following selections:

- **Attribute:** Select an attribute from the list of defined attributes.
 - **Type:** This noneditable field is populated by the Attribute.
 - **Value:** Select a value associated with the type of attribute; for example, a numeric value for Formatted Number attribute, a List for List attribute, multiple lines of displayed text without scrolling for Multi-Line Text, a name of a person, User, or Yes or No for the Yes/No attribute.
 - **Access:** Select the access to the attribute.
4. Click **OK**.

Adding Attachments

If you have an attachment you want to include with your task, such as a Word file, Excel spreadsheet or other document, you can use one of the following methods to attach the document to the task. You can attach multiple items at the same time. When you click OK, the system uploads all the documents that you attached.

To add an attachment to a task:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a task.
3. Select the **Comments** tab.
4. Click the **Attachment** icon to open the **Add Attachment** dialog box.
5. Select one of the following options to attach the document:
 - Browse to the location of the document.
 - Drag and drop the document directly from your local directory.
6. **Optional:** Rename the document.
7. Click **OK**.

Sorting Tasks

From the Task List, you can sort tasks by ascending or descending order. You can sort by Schedule Name, Status, Owner, Start or End Date, or Duration.

To sort tasks:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Hover over a column header until the Sort icons display, and then click **Sort Ascending** or **Sort Descending**.

Searching for Tasks

You can use the Task Find feature to find specific tasks. For example, you might enter "load" to find load tasks. You can search using full or partial words. You can scroll through the results using the Previous and Next buttons.

To search for a task:

1. On the Home page, click **Tasks**, and then click **Tasks**.

2. Enter a task name in the **Search** field.
3. Click **Previous** or **Next** to find the previous or next task that matches the search criteria.

Moving Tasks

You can use views to move tasks. For example, you can move tasks in the Gantt view.



Note:

Move is not available for parent tasks.

To move a task:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Select a task.
3. Right-click on the task and drag it to a new location, or cut, copy, and paste the task.
4. Navigate to the target destination for the task and click **OK**.

Cutting, Copying, and Pasting Tasks

You can use views to cut and copy tasks in templates and schedules. For example, you can copy a task from one schedule or template and paste it into another.

When you paste a task, the Task Details dialog box opens and enables you to modify the task that you are pasting.

If you paste a task onto a parent task, the pasted task becomes a child of the parent task. If you paste a task onto a child task, the pasted task becomes a sibling of the child task.



Note:

Cut, Copy, and Paste features are not available for parent tasks. The Cut function is not available for scheduled (open or closed) tasks.

To cut, copy, or paste a task:

1. On the Home page, click **Tasks** and select a task.
2. Right-click on the task and select an action, or from the main toolbar, click **Actions**, and then select:
 - **Cut**: Cuts the task and stores it on the clipboard.
 - **Copy**: Copies the task and stores it on the clipboard.
3. Right-click on the task, then select **Paste**, or from the main menu toolbar, click **Actions**, and then select **Paste**.

The **Task Details** dialog box opens and enables you to make changes to the task that you are pasting.

4. Click **OK** to complete the paste operation.

The task is inserted and the views and filter views are refreshed to display the pasted task.

Reopening Manual and Automated Tasks

You can reopen tasks and choose to reestablish the predecessor and successor relationships. This is available on both manual end user tasks as well as automated tasks. Reopening an automated task will execute the task with the same parameters. If modifications to the automated task parameters are required, edit the closed automated task and select **Reopen Task**.

Reopening a Manual Task

To reopen a task:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a closed task and click **Open** or click on the task name.
3. On the **Action** dialog, select **Reopen Task** from the **Actions** menu.
You can choose which successors to automatically reopen and restore the predecessor links when a task is reopened. From the list of these successor tasks, you can choose all of them, none (default), or some subset for reopening.

Table 12-17 Successor Type - Use Case Example

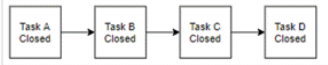

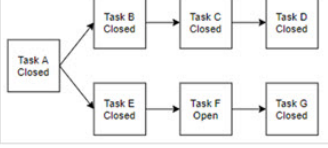
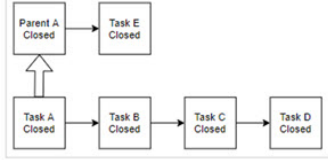
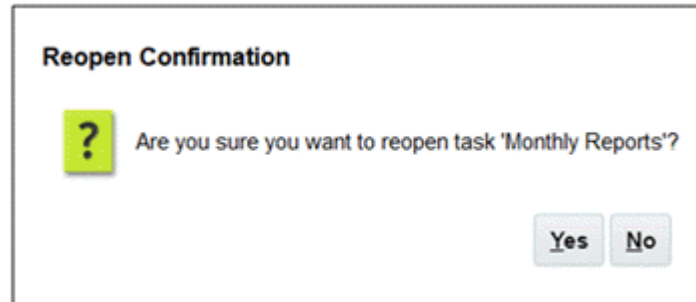
Successor Type	Description	Use Case Example
Direct Successors	The simplest case is a single line of successors and is likely to be the most common case. Each Closed or Errored (less likely) task that is a successor of the task to be reopened is eligible to be reopened	 <p>If Task A is reopened, 'Task B', 'Task C' and 'Task D' are available to be reopened.</p>
Mixed Status Successors	Once an Open or Pending task is encountered, it and any subsequent tasks are not eligible to be reopened.	 <p>If Task A is reopened, only 'Task B' is available to be reopened.</p>
Multiple Successors	A task can have more than one successor. Each branch should be followed to determine eligible tasks. This should extend all the way down the tree.	 <p>If Task A is reopened, 'Task B', 'Task C', 'Task D' and 'Task E' are available to be reopened.</p>

Table 12-17 (Cont.) Successor Type - Use Case Example

Successor Type	Description	Use Case Example
Parent Tasks	Parent tasks will be automatically be reopened if they were closed prior to their child task re-opening. In this case, any successor tasks of the parent are eligible to be reopened.	 <p>If Task A is reopened, 'Task B', 'Task C', 'Task D' and 'Task E' are available to be reopened. 'Parent A' is automatically reopened.</p>

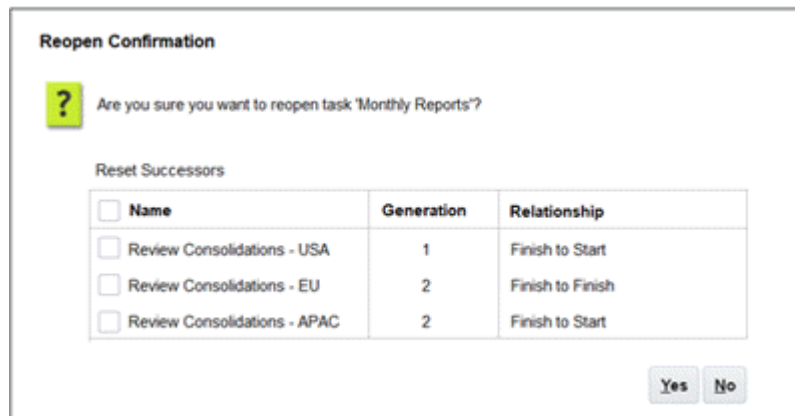
- If there are no eligible successor tasks, the **Reopen Tasks** dialog displays a confirmation message prompting you to reopen the specified task.



- Click **Yes**, to close the dialog and reopen the task.
- Click **No**, to close the dialog without reopening the task.
- If there are eligible successors to the task to be reopened, the **Reopen Tasks** dialog displays a confirmation message listing the successors with checkboxes, and you can select them to reopen.

 **Note:**

Automated tasks that didn't complete successfully due to an error, warning, or were force closed won't be listed in the successors list.



- **Name** checkbox: Selecting the **Name** checkbox toggles between selecting all or selecting none of the successors. By default, this is unchecked and all of the tasks are unchecked.
 - **Successor Name**: Selecting a checkbox next to a successor task will cause it to reset when the task reopens.
 - **Generation**: Read-only field indicating the distance from the task being reopened. Parent tasks will not count as part of this calculation.
 - **Relationship**: Read-only field displaying the relationship to the task being reopened.
 - Click **Yes** to close the dialog and reopen the task.
 - Click **No**, to close the dialog without re-opening the task
4. Add or delete predecessors and then click **Save and Close**.
Designate relationships:
- Designate predecessor tasks. Choose one:
 - If there are predecessors, then you can choose this option: Re-establish predecessor relationships - Tasks will open in original order.
 - Ignore predecessor relationships - All tasks will re-open immediately.
 - Designate successor tasks:
 - a. Select **Re-Open Successor Tasks**. The successor list is displayed.
 - b. Select the successor tasks.
5. Click **OK** to close. The task details dialog box closes and the task reopens based on your selections. Click **OK**, otherwise, click **Cancel**.

Reopening an Automated Task

To reopen an automated task and change the automation parameters:

1. On the Home page, click **Tasks**, and then **Tasks**.
2. Select a closed automated task and click the **Edit** icon.
3. On the **Task Details** dialog, click **Reopen**. The Task is now editable.
4. Click on the parameters tab and update parameters as needed.
5. Click **Save and Close**.
The service will display a confirmation message to reopen the automated task.
 - Click **Yes**, to close the dialog and reopen the task.
 - Click **No**, to close the dialog without reopening the task.

If there are eligible successors to the task to be reopened, the **Reopen Tasks** dialog displays a confirmation message listing the successors with checkboxes, and you can select them to reopen. See the previous section [Reopening a Manual Task](#).

Submitting Tasks

To submit tasks:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Select the tasks that you need to submit.

To multiselect, press **Ctrl** for random selection or press **Shift** while you click the first and last row in a range.

3. Select **Submit Task**. A warning is displayed that this will complete the task. Click **Yes** to proceed.
4. Review any errors, and click **OK**.

Approving or Rejecting Tasks

To approve or reject tasks:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Select the tasks that you need to submit.

To multiselect, press **Ctrl** for random selection or press **Shift** while you click the first and last row in a range.

3. Highlight the selected Task, and under **Actions**, select **Set Status**, and then select **Approve** or **Reject**.
4. Review any errors, and click **OK**.

Claiming or Releasing Tasks

You can claim and release a single task or multiple tasks at a time in Task Manager. Users who are associated with tasks can claim or release tasks.

The ability to claim a task from another user is required to accommodate cases where a claim has occurred; however, the user with the claim can't complete the role functions (for example, because of an absence).

When a task is claimed, the Assignee changes to the person who claimed.

When a task is released, the Assignee is no longer associated with the task.



Note:

If the bulk update feature is enabled, you can claim or release multiple tasks at a time.

Claiming or Releasing a Task Using Task Actions Menu

To claim or release a task from the task **Actions** menu:

1. On the Home page, click **Tasks**, and then click **Schedule Tasks**.
2. Click the task that you want to claim or release or select the task and click the **Open** icon.
3. From the **Actions** menu, click **Claim** or **Release**.
A pop-up message asking for confirmation is displayed.
4. Click **Yes**.
A confirmation message is displayed indicating the task was claimed or released successfully.
5. Click **Close** to close the dialog box.
6. Review and fix the errors, and then perform the same steps again to claim or release the tasks.

Claiming or Releasing Task from Task List

To claim or release tasks from the Task List:

1. On the Home page, click **Tasks**, and then click **Schedule Tasks**.
2. Select the task that you want to claim or release.
To multiselect, press **Ctrl** for random selection or press **Shift** while you click the first and last row in a range. The selected tasks are highlighted.
3. From **Actions**, click **Update**, and then click **Claim** or **Release**.
A pop-up message asking for confirmation is displayed.
4. Click **Yes**.
The Task Action Results dialog box displays information about the status, number of tasks selected, tasks considered, tasks processed successfully, and tasks that were unsuccessful. The status are:
 - Processing
 - Completed Successfully
 - Completed with ErrorsA visual indicator shows the completion percentage. For tasks processed unsuccessfully, the dialog box displays the errors. You can click the **Export to Excel** icon and export the displayed errors to an excel file.
5. Click **Close** to close the dialog box.
6. Review and fix the errors, and then perform the same steps again to claim or release the tasks.

Managing Task Reassignments

You can use the Actions panel to work on multiple tasks simultaneously.

From the Task Actions dialog box, workflow users (Assignees and Approvers) can request reassignment of their workflow role for a single task. These requests require approval. Administrators and schedule/template Owners can reassign the task using the Edit Task dialog box without requiring approval.

When tasks are reassigned, email notifications are sent immediately to reassigned users.

To request a reassignment:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Click on a task to open the Task Properties.
3. Click the **Actions** menu and select **Request Reassignment**.
4. Enter or click **Search** to find the reassignment.
5. On the **Create Reassignment Request**, click the Select User button to select **To User**.
6. Under **Reassign**, and select the tasks to be reassigned:
 - **Selected Tasks**
 - **Selected and Future Tasks**
7. Enter a **Justification** for the reassignment.
8. Click **OK** and then **Close**.

Automated Task Execution

You can view the status of the automated tasks on the Schedule Tasks page.

To view the status of the tasks:

1. On the Home page, click **Tasks**, and then click **Tasks**. For more information, see [Working with the Task Dialog Box](#)
2. Click the **Refresh** icon to update the task details within the task list.

For Process Automation tasks, Task Manager executes the business process when the start time is met. When the business process completes, the task is marked complete.

During the execution of this process, Task Manager submits the job to the target application which returns a Job ID as most of the tasks execute in the background. Task Manager polls the target application to check the status of the job at regular intervals. Initially, the polling interval is less than a second and gradually it increases to a maximum polling interval of 15 mins. The polling interval is proportional to the time taken by the task to complete as described in the following table. The polling interval reduces the overhead related to frequent querying for job completion status in both Task Manager and the underlying application which ensures optimal system performance.

Process Automation Execution Time	Additional Time to Update Task Completion Status
1 minute	Maximum 1 second
10 minutes	Maximum 15 seconds
1 hour	Maximum 2 minutes
5 hours	Maximum 9 minutes
10 hours	Maximum 15 minutes

Note:

If the task status has not been updated after the job is completed, don't force close the task immediately. It's recommended to wait for up to 15 minutes for long running tasks or as per the preceding timings.

For event monitoring tasks, Task Manager executes the event monitor when the start time is met. The task status is updated once Task Manager receives the event notification from the other application.

Canceling Tasks

The purpose of canceling (or aborting) a task (instead of performing a forced close) is to prevent successors from continuing and to keep the process moving:

- When a Finish-to-Start or Finish-Error-to-Start predecessor is canceled, its successors remain as Pending. To keep the process moving, you must edit the successors to remove the canceled predecessor and to start the successors.
- When a Finish-to-Finish or Finish-Error-to-Finish predecessor is canceled, to keep the process moving, the task owner/schedule owner/administrator must force a close of the successor.

Deleting Tasks

You can delete tasks that you no longer need. To delete a task, you must have Service Administrator or Power User security rights.

In schedules, you can delete only tasks that have a status of Pending. You cannot delete tasks that have a status of Open or Closed. If you delete a parent task, you can choose to delete just the parent, or the parent and its children.

You can delete the schedule tasks using the actions menu on the task . (Delete will not appear in the menu when the task is open or completed.)

To delete a task:

1. On the Home page, click **Tasks**, and then click **Tasks**.
2. Click **Actions**, and then select **Delete**.
3. At the confirmation prompt, click **Yes**.

Managing Services

The Services (**Homepage > Application > Services**) option allows you to view the status of certain service related tasks. Green indicates that it's running. Actions to take from Services are **Run Now** or **Restart**.

Note:

You can use **Run Now** to take an immediate action such as run open tasks. You should only use **Restart** if there was a service shutdown and this option is not green. Restart resets the service without running the service itself.

- **System Maintenance:** Refers to actions that Task Manager performs routinely within Tasks, such as the user synch process and cleanup of the database and is not the same as actions taken at the Cloud level called Daily Maintenance. Daily Maintenance is accessed by clicking Tools, then Daily Maintenance, includes actions such as operational maintenance and backup snapshots performed in the Cloud on test or production environments.
- **Task Email Notifications:** Used to notify users that work has been assigned to them. A Service Administrator can use the option on Services to **Restart** or **Run Now**.

Note:

- There is a separate option that a Service Administrator can use to turn off email notifications under **Application** → **Configuration** → **Settings** → **System Maintenance Process**.
- Email notifications contain service and tenant information in the footer to help identify where an email is coming from.

- **[Schedule Name] Monitor:** Available for each schedule that is open and with tasks in the future. This option checks if any tasks need to be open in a schedule.

- **Task Status Update:** Background service which executes and monitors the process automated tasks.

Managing Schedules

A schedule defines a chronologically ordered set of tasks that must be executed for a specific business process, and is the application of a template into the calendar. For example, you can apply the Quarterly template as Q1FY19 for the first Quarter, then apply the template again as Q2FY19 for the second quarter.

The maximum number of schedules that you can create, import, or deploy is 100,000.

Schedules have a status of Pending, Open, Closed, or Locked. You can change the status of a schedule from Pending to Open, or from Open to Closed or Locked.

Note:

- After a schedule is set to Open, it cannot be reset to Pending.
- After a schedule is set to Locked, its status cannot be changed.
- Schedule Owners and Viewers are notified by an email when a Schedule is deleted.
- An immediate reassignment request notification is sent out to administrators and schedule owners when an assignee or approver requests a reassignment.

Manually Creating Schedules

To create a schedule, you must be an Administrator or Power User. A Power User can run Create Schedule on a template or select New from Manage Schedules. You can manually define a schedule from the Manage Schedules page, or create a schedule from a template. When you create a schedule from a template, all values are inherited from the template definition.

Watch this video to learn more about creating schedules.



Creating Schedules

To manually create a schedule:


1. On the Home page, click **Application**.
2. Click **Task Manager**.
3. Click the **Schedules** tab on the left.
4. Click **New**.
5. Enter schedule information on the schedule tabs:
 - [Setting Schedule Properties](#)
 - [Adding Instructions to Schedules](#)
 - [Assigning Schedule Viewers](#)
 - [Applying Schedule Attributes](#)

- [Adding Day Labels](#)
- [Working With Schedule Rules](#)
- [Viewing Schedule History](#)

Setting Schedule Properties

The Properties tab enables you to set the name, description, start and end dates, and owners for schedules. The schedule owner must be an Administrator or Power User. The default owner is the current user. The start and end dates specify the initial date range for the schedule, however, after the schedule is created, you can add tasks with dates earlier or later and the properties are updated to reflect the earliest and latest dates.

To set schedule properties:

1. Create a new schedule and select the **Properties** tab:
 - **Name:** You can enter a maximum of 80 characters.
 - **Description:** You can enter a maximum of 255 characters.
 - **Organizational Unit**
 - **Start Date:** Starting date for the schedule
 - **End Date:** Ending date for the schedule
 - **Year**
 - **Period**
 - **Day Zero Date:** The date to assign as day zero
 - **Owner:** Use the default owner or click **Select Owner** .
 - **Status**

 **Note:**

The **Status** field does not display until the new schedule is saved. The schedule status is initially set to Pending and is display only.

- **Source Template**
2. To save and close, click **OK** or click another tab; all entries are saved.
 3. Enter schedule information on the schedule tabs:
 - [Adding Instructions to Schedules](#)
 - [Assigning Schedule Viewers](#)
 - [Applying Schedule Attributes](#)
 - [Adding Day Labels](#)
 - [Working With Schedule Rules](#)
 - [Viewing Schedule History](#)

Adding Instructions to Schedules

You can specify instructions and supporting documents for a schedule, which are then inherited by all tasks in the schedule.

To add instructions to a schedule:

1. Create a new schedule and select the **Instructions** tab.
2. In **Instructions**, enter instructions for the schedule.
3. To add a reference:
 - a. In the **References** section, click **Add**.
 - b. From the **Reference Type** list, select one of these types:
 - **Local File:**
Click **Choose File** to select and attach the file, enter a **Name**, and click **OK**.
 - **URL:**
Enter the **URL**, then enter a **URL Name**; for example, <http://www.oracle.com>, Oracle, and then click **OK**.
4. To save and close, click **OK** or click the **Viewers** tab; all entries are saved.
5. Enter schedule information on the schedule tabs:
 - [Setting Schedule Properties](#)
 - [Assigning Schedule Viewers](#)
 - [Applying Schedule Attributes](#)
 - [Adding Day Labels](#)
 - [Working With Schedule Rules](#)
 - [Viewing Schedule History](#)

Assigning Schedule Viewers

The Viewers tab enables you to assign viewer rights for schedules. A schedule can have multiple viewers, however they must have the product security roles. Viewers receive read-only access to all tasks in the schedule.



Note:

Only users who have the task Viewer role can respond to questions.

To assign viewer rights:

1. Create a new schedule and select the **Viewers** tab.
2. Click **Add**.
3. To search by users or groups, click the **Search Users** button, then select **Users** or **Groups**.
4. Enter a user name, or part of the name, then click **Search**.

5. To identify a user, click **Advanced**, then enter a **User ID** or **Email**.
6. From the **Search Results** list, select users.
7. For additional details about the user, such as groups, roles, and assignments, click **Details**.
8. Click **Add** or **Add All** to move users to the Selected list.

**Tip:**

To remove users, select users, then click **Remove** or **Remove All**.

9. To save and close, click **OK** or click the **Attributes** tab; all entries are saved.
10. Enter schedule information on the schedule tabs:
 - [Setting Schedule Properties](#)
 - [Adding Instructions to Schedules](#)
 - [Applying Schedule Attributes](#)
 - [Adding Day Labels](#)
 - [Working With Schedule Rules](#)
 - [Viewing Schedule History](#)

Applying Schedule Attributes

To locate schedules in the system, you can apply attributes to the schedule. When you select an attribute, you can set a value for the attribute based on the attribute type. You can later filter by the attribute value.

For example, you may have a List attribute named Sales Region with the values of North, South, East, and West. The current schedule applies only to the West Sales Region, so you can add the Sales Region attribute and set it to "West".

To apply an attribute:

1. Create a new schedule and select the **Attributes** tab.
2. Click **Add**.
3. From the **Attribute** list, select an attribute.
4. For **Value**, depending on the attribute, select a value for the attribute from a drop-down list, or enter a value.
5. To save and close, click **OK** or click the **Day Labels** tab; all entries are saved.
6. Enter schedule information on the Schedule tabs:
 - [Setting Schedule Properties](#)
 - [Adding Instructions to Schedules](#)
 - [Assigning Schedule Viewers](#)
 - [Adding Day Labels](#)
 - [Working With Schedule Rules](#)
 - [Viewing Schedule History](#)

Adding Day Labels

You use business day labels in the business activity for a calendar day. Labels can mark a milestone day or specify the purpose of the day.

To add a day label to a schedule:

1. Create a new schedule and select the **Day Labels** tab. You can enter a maximum of 20 characters.
2. Add a day label to a specific date.
3. To save and close, click **OK** or click the **Rules** tab; all entries are saved.
4. Enter schedule information on the schedule tabs:
 - [Setting Schedule Properties](#)
 - [Adding Instructions to Schedules](#)
 - [Assigning Schedule Viewers](#)
 - [Applying Schedule Attributes](#)
 - [Working With Schedule Rules](#)
 - [Viewing Schedule History](#)

Working With Schedule Rules

Schedule rules apply to all tasks in the schedule and thus apply rules to groups of tasks. Rules configured in the **Schedule** dialog box are copied to new schedule tasks.

Available schedule rules:

- **Auto Approve Task:** Automatically completes specified approvals only if specified conditions have been met.

Example of conditions that could apply to this rule include: Attributes have specified values (including calculated attributes).

When conditions are satisfied, the specified approver levels are marked complete, and workflow progresses to the next approval level, or closes if no additional approval levels exist.
- **Auto Submit Task:** Automatically submits a task if specified conditions are met.

When conditions are satisfied, the Assignee role is marked complete, and workflow progresses to the first Approval level, or closes if no Approval levels exist.
- **Prevent Task Approval:** Prevents approval of a task based on attribute values, or other characteristics.
- **Prevent Task Submission:** Prevents submission of a task based on attribute values, or other characteristics.

To view schedule rules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Double-click a schedule.
4. Select the **Rules** tab. You can view the following information:

- **Order:** The order of precedence
 - **Rule:** The name of the rule
 - **Conditions:** The choice of what conditions must exist before running the rule
5. To edit a rule, on the **Rules** tab, click **Edit** and update:
- **Rule:** Select a rule.
 - **Description: Optional.** Explain why you configured the rule and how it should be used. You can enter a maximum of 255 characters.
 - **Approver Level:** Select the rule for all levels or select the Approver levels.
 - Select **Create Filter** and populate the conditions section, or select **Use Saved Filter**, and then select a filter. The filter selected and configured for the rule determines the conditions that triggers the rule to apply.
 - **Conditions:**
 - **Use Saved Filter:** The **Condition** section displays a read-only version of the conditions associated with the saved filter.
 - **Create Filter:** The **Condition** section is enabled.

Conjunction, Source, Attribute, Operator, and Value behave as they do for the existing advanced filter feature.
 - For **Filter Task**, specify the task for which the conditions should be selected:
 - **Current Task**
 - **Any Predecessor**
 - **Specific Task** (provide the **Task ID**)

 **Note:**

When you make changes to a rule definition, the additional information is added to the audit log. You can view the changes both in the **History** tab as well as the **Audit Report**.

6. Enter schedule information on the schedule tabs:
- [Setting Schedule Properties](#)
 - [Adding Instructions to Schedules](#)
 - [Assigning Schedule Viewers](#)
 - [Applying Schedule Attributes](#)
 - [Adding Day Labels](#)
 - [Viewing Schedule History](#)

Setting Required Task Parameters

The task is in a pending state until the required parameters are filled in. If they are not filled in before the specified start date, then an email notification is sent to the task owner. In addition, the task shows up in views under **Needs Attention**. After the required parameters are filled in, the task starts.

Opening Schedules

You open schedules to add, edit, or work on tasks.

To open a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Use one of these methods:
 - Select **Actions** to the right of the schedule in the listing, and then select **View**.
 - Highlight a schedule, then click the **View** icon.
 - Right-click the highlighted schedule, and then select **View**.

Editing Schedules

You can edit schedules to change the properties, such as the name or the schedule or the start and end dates. You cannot change the start date to a date later than the first task in the schedule, or the end date to a date earlier than the last task in the schedule. You can make changes to an Open or Pending schedule to modify pending tasks. You cannot add, change, or delete tasks in a Closed or Locked schedule. To edit a schedule, you must be the schedule owner or an Administrator.

To edit a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Select a schedule and click **Edit**.
4. Edit the schedule.
5. Click **OK**.

Adding Tasks to Schedules

You can add tasks to a schedule if it is Pending or Open. You cannot add tasks to a Closed or Locked schedule.



Note:

The maximum number of tasks that you can add to a Task Manager schedule is 500,000.

To add a task to a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Open a schedule.
4. Add tasks.

Importing Tasks into Schedules

You can import tasks, or partial task data, from text files into a schedule with a status of Pending or Open. For example, if you have a Microsoft Excel spreadsheet with task definitions, you can save the file as a CSV file, then import it into a schedule. You can also use the Import feature to quickly add many repetitive tasks by editing the fields in a CSV file and importing it, rather than creating individual new tasks.

You cannot import tasks into schedules that have a Closed or Locked status.

 **Note:**

Before you import a file to a schedule using the Update option for a closed task, remove the Owner, Assignee, Approver, and Start Date and Time fields from the import file, or an error occurs.

If you import information on an End-User task that has started running, it is reset to Open with Assignee status, and the answers to questions are cleared.

To import tasks into a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Click **Import Tasks**.
4. Enter the name of the file to import, or click **Choose File** to find the file.
5. Select an import option:
 - **Replace:** Replaces the definition of a task with the definition in the import file. This option replaces the task detail with the detail that is in the file that you are importing. It does not affect other tasks in the schedule that are not specified in the import file.

 **Note:**

You can select the **Keep Attachments** checkbox to retain attachments to tasks that are being replaced.

- **Update:** Updates partial information for tasks. For example, in the import file, you might have made changes to task instructions, reassigned Owners, Assignees, and Approvers, or removed some attributes and added new attributes. You might also have made the same change to a large number of tasks, for example, adding a new attribute to 100 of 400 tasks. The update option is not a full replacement of the task details. Only details for the task properties specified in the file are updated. For example, if the import file has only a column for a task instructions, the task name, Assignee, attributes, and other properties are not affected.

 **Note:**

The system displays a warning that tasks in the schedule that match a task ID in the import file will be modified. If you do not want to overwrite the task, click **Cancel**.

- **Delete:** Deletes tasks and associated information based on a list of task IDs provided in a file. The required information to perform a delete is a file with a column of task IDs.
6. **Optional:** Select **Keep Attachments** to retain any attachments associated with a task that is being replaced.
 7. Select a **Date Format**.
Select a format from the drop-down list of allowed date formats. Date formats are not translated. By default, the date format is set to the locale date format of the exported file location.
 8. For **File Delimiter** for the import file, select **Comma** or **Tab**. Select **Other** to specify any single character as the **Other Delimiter**.
 9. Click **Import**.
 - If the import is successful, the Import Success dialog box is displayed, indicating the schedule name, the name of the file containing the tasks, and the total number of tasks imported. Click **OK**.
 - If errors are found, the import process is not run, and the Import Errors dialog box displays the errors. View the errors, then click **OK** to return to the **Schedules** page.

Table 12-18 Troubleshooting Import Errors

Error	Resolution
Duplicate Task ID	Check for duplicate Task IDs. Task IDs must be unique within the template or schedule. See Creating Tasks .
Task Name is too long	The Task Name can contain a maximum of 80 characters. See Setting Task Properties .
Organizational value - "Invalid Value"	The Organizational value cannot be blank, contain bullet points or multiple lines.

Updating Tasks in Schedules

You may need to manually update information on a task that is running, and in this case, you can reopen it. When you reopen a task, it is reset to Open with Assignee status, and you can edit the information. For example, you can change the instructions and references, attributes, and questions. If you make changes, previous answers to questions are cleared.

Reopening a series of tasks does not reestablish the predecessor relationships. All end-user tasks are reset to Open with Assignee. No tasks are reverted to Pending status.

You can reopen tasks under these conditions:

Table 12-19 Conditions for Reopening Tasks

Task Status	End-User
With Assignee/Running	You can edit or import data into the Instruction, Attribute, or Question sections. When you save the task, it is reset to the Assignee, and the answers to questions are cleared.
With Approver	You can edit or import data in to the Instruction, Attribute, or Question sections. When you save the task, it is reset to the Assignee, and the answers to questions are cleared.
Closed/Error	From Task Details, the task owner can click Reopen to reopen the task and make changes. When you save the task, it is reset to the Assignee.

To update tasks in a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Open a schedule.
4. Select a task with a **Closed** or **Error** status, right-click, and then select **View**.
The View Task dialog box is displayed.
5. Click **Reopen**.
6. Edit the task.
7. If the system displays a warning that the Assignee must complete the task again, or that the service will be executed again, click **Yes** to continue or **No** to cancel.
8. Perform an action:
 - For a Closed task, click **Close**.
 - For an Error task, click **Save and Close**.

Reassigning Users in Schedules

You may periodically need to reassign users to different schedules. For example, you may create a schedule and assign a user to certain rights; however, later that employee leaves the company and another employee assumes those schedules. You can use the Reassign feature in the Schedules dialog box to automatically change assignments instead of manually searching for, opening, and editing individual schedules. The Reassign feature enables you to quickly find the schedules associated with one user and reassign them to another.

You can reassign users for multiple schedules at a time. This can be helpful if your application has a large number of schedules.

To reassign users:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Select one or more schedules for which you want to reassign users.
4. Click **Actions**, and then **Reassign User**.
5. For **Find User**, click **Find User** and enter search criteria for the user that you want to replace:

- a. From the **Select User** dialog box, enter the first or last name for the user, and click **Search**.
 - b. Select the user from the results, then click **OK**.
6. For **Replace With**, click the **Replace With** icon and enter search criteria for the user to whom you want to reassign tasks:
 - a. From the **Select User** dialog box, enter the first or last name for the user, and click **Search**.
 - b. Select the user from the results, then click **OK**.
7. Select the **Ending Between** dates.
8. Select roles for the user that must be reassigned:
 - **Owner**
 - **Assignee**
 - **Approver**
 - **Viewer**
9. Click **Reassign**.

When the process ends, the system displays a Reassign Users - Success message that indicates that the user reassignment is complete, and displays the schedule name and total number of user reassignments made.

Authorizing Process-Automated Tasks

When you create Process-Automated tasks, for security purposes, you specify a user account under which the task is run. To preserve security, you may require authorization to perform the task if any of these conditions occurs:

- If you add a Process-Automated task with an alternate runtime user known as the Run As user to a schedule, from a template or by manually adding the task
- When you set a schedule to Open status, the system automatically issues a request for authorization if it has not been completed.

If the parameters of a task are modified by a user other than the Assignee (or task owner if the owner is also the Assignee), the authorization is reset to Unauthorized and must be obtained by entering a password. For Process-Automated tasks, if a user other than the specified or default Run As user modifies the parameters, the task is reset to Unauthorized.

Authorization ensures that the user performing the Process Automated task has security privileges for the application and data for which the task runs. An administrator who knows the credentials of the runtime user can perform the authorization or issue a request to the user to obtain authorization.

When the Process Automated task is scheduled to run, if authorization is not provided, the task is not run, and its status changes to Needs Attention. If an owner or Assignee edits the task, the task details indicate that authorization is required. In this case, only the Run As user can authorize the task.

A user who receives a request for authorization can access the authorization on the Worklist from a link in the email or by logging on to the application.

 **Note:**

From a Schedule or from a Worklist, before the task Start Date, the Administrator, Schedule Owner, or Task Owner can authorize the task. After the task Start Date, only the Run As user can authorize the task.

To authorize a task:

1. On the Home page, click **Application**, and then click **Task Manager**
2. Select the **Schedules** tab on the left.
3. Select a schedule.
4. Select **Actions**, and then select **Authorize Tasks**.

The system displays a **Users** selection list and a table of unauthorized tasks for the selected schedule. The user selection list is populated with users that have pending Process-Automated tasks assigned to them that require authorization.

5. From the user selection list, select a user.

The system displays a list of unauthorized tasks for that user. Your user name displays first on the list in bold by default. If you have no unauthorized tasks, the list is blank.

6. Select a task that needs authorization.
7. To view task details, click a task name and review the task parameters.

 **Tip:**

To contact the task owner by email, click the Owner name next to the task and view the user details.

Setting Schedule Status

You can manage the schedule lifecycle by setting the schedule status. You can set the status of a schedule to Open, Closed, or Locked, depending on its current status. To set schedule status, you must be the schedule owner or Service Administrator.

You can set the status for multiple schedules at a time. This can be helpful if your application has a large number of schedules.

These are the available statuses:

- **Pending:** The schedule is not yet active. This is the default status of the schedule when it is created. For a schedule in Pending status, you cannot close or lock the schedule.
- **Open:** The schedule is open for work to be performed. Tasks in the schedule can be run.
- **Closed:** The schedule is no longer active but follow-up work may be required. Tasks in the schedule continue to proceed based on their definitions, but you cannot add tasks to the schedule. Schedule owners or administrators can reopen a Closed schedule, which changes its status to Open.
- **Locked:** The schedule is locked and cannot be modified. You can reopen a locked schedule, if required.

When you create a schedule, it has a status of Pending by default so that you can make final adjustments to it, and add, edit, or delete tasks.

To run a schedule, change the status from Pending to Open. When the schedule is opened, tasks begin to execute according to their definition. Status for tasks that have met their starting condition are set to Open, and task notifications are sent to their Assignees.

 **Note:**

If a schedule task start time is reached and authorization has not been provided for a system-automated task, the task remains in the Pending status and requires authorization.

Automated tasks execute based on their defined workflow within the schedule and doesn't require manual intervention. If you want the automated task execution to be dependent on a manual user action, then there are two scheduling options:

- Add a basic or an end user task as a **start to finish** predecessor of the automated task. The automated task will execute once the preceding task is completed, and the start time is met. See [Setting Task Predecessors](#).
- Assign a **Run As** user within the workflow on the automated task. See [Selecting the Workflow](#). When a **Run As** user is specified for the automated task, then the task's execution will be dependent on the designated **Run As** user authorization. The automated task will only execute after the start time, predecessors, and **Run As** authorization have been met. See [Authorizing Process-Automated Tasks](#).

When work on the schedule has reached a stage when follow-up work is all that is required, you set the status to Closed. You cannot add new tasks to a Closed schedule. However, users can continue to work on tasks that are not complete. You can reopen a Closed schedule, which changes its status to Open.

When all tasks are completed, you set the status to Locked. You cannot edit a Locked schedule, but you can set the status back to Open, if required.

To set the schedule status:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Select one or more schedules for which to set status.
4. Click **Actions**, and then **Set Status**, or select the **Set Status** dropdown.
5. Click one of these status options, depending on the current status:
 - **Open**
 - **Closed**
 - **Locked**

Viewing Schedule History

The system maintains a history of schedule actions, which you can view from the Edit Schedules dialog box. The History tab displays the components that were updated, the modification type, the old and new values, the user who made the modification, and the change date. The information is read-only.

To view schedule history:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Select a schedule.
4. Select the **History** tab and review the schedule history.
 - **Modification Type:** Indicates the type of change: Created, Changed, Added, Removed
 - **Modified On:** Date of the modification
 - **Modified By:** Name of the user who modified the schedule
 - **Old Value**
 - **New Value**
5. Click **OK**.

Validating Schedules

You can validate schedules with a status of Pending or Open. Validating a schedule checks for problems with start and end dates, predecessor relationships, parent-child relationships, and missing task parameters for product integrations. You cannot change a schedule status from Pending to Open until all validation errors are resolved. To validate schedules, you must be the schedule owner or Service Administrator.

The validation results show the schedule names, status, and error messages. You can sort the results by Schedule Name or Status.

To validate schedules:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Select one or more schedules to validate.
4. Click **Actions**, and then select **Validate**.

If no errors exist, the validation results show a "Schedule is valid " message. If errors exist, it shows the error details.

Locking Schedules

You can lock a schedule to prevent users from making further changes.

To lock a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. From the list of schedules, select a schedule.
4. Select the **Actions** icon to the right of the schedule in the listing, and then select **Set Status**, or from the **Set Status** dropdown, select **Locked**.
5. **Optional:** If you need to reopen the Locked schedule, select **Actions**, and then **Set Status**, or from the **Set Status** dropdown, select **Open**.

Viewing Schedules

In Schedules, you can specify which columns to display for the list of schedules, or show all. You can also reorder columns, sort columns by ascending or descending order, or change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. Do one or more of the following tasks:
 - To display all columns, select **View**, then **Columns**, and then select **Show All**.
 - To display specific columns, select **View**, then **Columns**, and then select or deselect the column names.
 - To reorder columns, select **View**, then **Reorder Columns**, select columns, and then use the Up or Down arrows or drag them to change the order.
 - To sort columns, hover over a column header until the Sort icons are displayed, and then click **Sort Ascending** or **Sort Descending**.
 - To change column widths, hover over the column header dividers until the arrows display, and drag the columns to the desired width.

Searching for Schedules


You can use the Search text box in a Schedules list to quickly find schedules. You can enter full or partial names on which to search. Using the filter bar, you can control the schedules that you see in the list. By default, all schedules are displayed.

To search for a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. To search for a schedule, enter search criteria in the **Search** text box.
4. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals**, **Does Not Equal**, **Contains**, **Does Not Contain**, **Starts With**, and **Ends With**.

You can filter schedules using these categories: **Name**, **Year**, **Period**, **Status**, **Start Date**, and **End Date**. Click **Add a Filter** to add additional filters: **Created By**, **Created On**, **Day Zero Date**, **Description**, **Last Updated By**, **Last Updated on**, **Organizational Unit**, **Owner**, and **Tasks**.

 **Note:**

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click **Clear All Filters** in the  icon.

Deleting Schedules

You can delete a schedule that you no longer need. To delete a schedule, you must be the schedule owner or Service Administrator. Deleting a schedule removes it and all references to it from the system.

To delete a schedule:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Schedules** tab on the left.
3. From **Schedules**, select the schedule that you want to delete.
4. Click **Delete**.

The system displays a warning that if you delete a schedule, it will also permanently delete all tasks within the schedule, and the only way to recover is from a backup.

5. To delete the schedule, click **Yes**.

Managing Task Manager Integrations

You can enable Task Manager tasks to include integrations within the EPM Cloud and other external applications.

Task Manager allows the user to incorporate integrated tasks within their business processes. These simplify the process by automating manual tasks or including embedded application pages or links.

To manage Task Manager Integrations, you must have the Service Administrator role.

Task Manager support the following Integration types:

End User

An End User integrated task requires the user to interact with an application web page. These application web pages are displayed within the task or included as links within the task. An Integration requires an execution URL for user tasks and an optional set of parameters. The execution URL launches the external program, and the parameters pass information required for the task to the external program. For example, the Approve Journals Integration contains parameters such as the Point of View dimension values for the journal.

Users must perform and validate the task. For example, the task may be a generic task such as submitting data, or it may require product integration to facilitate or validate its completion.

Process Automation

A Process Automation task initiates an action within the connected application. These integrations are automatically executed in external applications when their Start date and time are reached, and their predecessor tasks are completed, for example, an overnight feed from a General Ledger. These tasks are often executed after working hours. They require limited user interaction and do not have Assignees.

Event Monitoring

An Event Monitoring task is a task which is passive. It does not initiate any action but monitors another application awaiting for an action or status to occur. Once the action or status occurs, the task is marked complete. These are based on events that occur in external applications, for example Approve Journals.

Task Manager provides these pre-built Integrations:

- Cloud Integrations: End User and Process Automation integrations for EPM Cloud Connections. See [Managing Integrations with EPM Cloud Services](#).
- Cloud Integrations: Oracle Cloud ERP. See [Managing Integrations with Cloud and On-Premises Applications](#).
- On-Premises End User and Event Monitoring Integrations. See [Managing Integrations with Cloud and On-Premises Applications](#).
- On-Premises Oracle E-Business Suite General Ledger, Accounts Payable, and Accounts Receivable Integrations. See [Managing Integrations with Cloud and On-Premises Applications](#).

If you require any other Integrations for Cloud or On Premises, you can create Custom Integrations. See [Creating Custom Integrations](#).

Managing Integrations with EPM Cloud Services

If you are using Task Manager and have subscriptions to other EPM Cloud services, you can create connections between services and enable integrations using Task Manager functionality.

Pre-built integrations enable you to perform Task Manager tasks that access other EPM Cloud functionality.

Pre-built integrations are provided within Task Manager for these EPM Cloud services:

- Account Reconciliation
- Enterprise Data Management
- Financial Consolidation and Close
- Planning and Planning Modules
- Profitability and Cost Management
- Tax Reporting

To learn more about how to set up integrations, see [Adding Pre-built Integrations within the EPM Cloud](#).

To learn more about which end user integrations are available, see [End User Integrations for EPM Cloud](#).

To learn more about which pre-built automated integrations are available, see [Automation Integrations for EPM Cloud](#).

Adding Pre-built Integrations within the EPM Cloud

Make sure you have the prerequisites and follow these steps to set up an integration between Task Manager and other EPM Cloud services.

Prerequisite

To create integrations between EPM Cloud services, you need to obtain a subscription to the EPM Cloud service you want to integrate with.

To Create the Integration Type and Task Type

For EPM Cloud services where Task Manager has been enabled (for example, Financial Consolidation and Close), the service is automatically configured with the Integrations and Task Types for that business process.

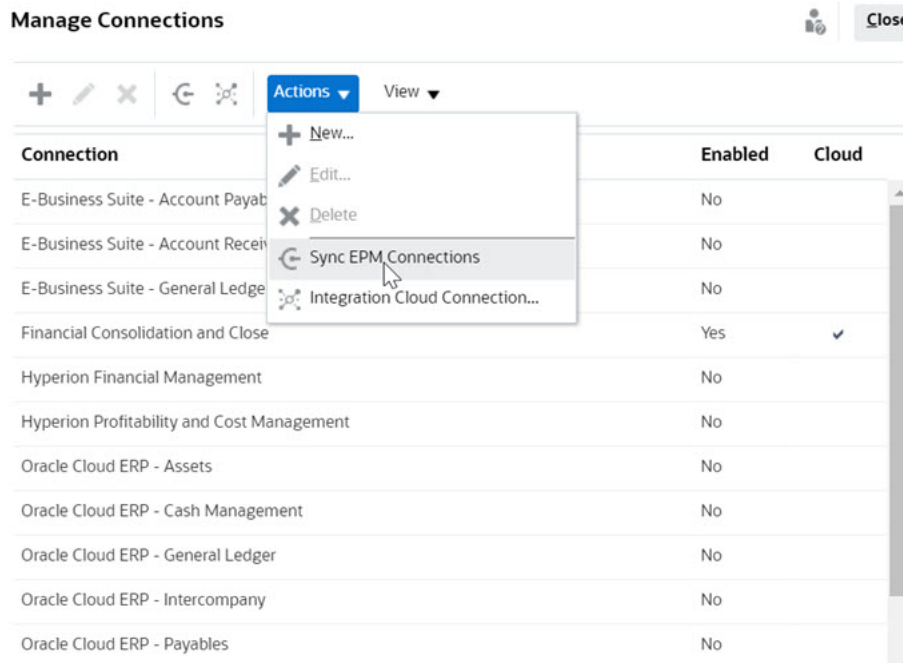
Task Manager can be extended to include integrations with your other business processes by defining a connection to the business process and then deploying the Integrations and Task Types.

To add Pre-built integrations within the EPM Cloud:

1. Create the connection between the service that contains Task Manager and the other service:
 - On the Home page, click **Tools**, and then click **Connections**.
 - Click **Create** to create a new connection:
 - For Enterprise Data Management, select **Other Web Service Provider**.
 - For all other EPM services, select **Oracle Enterprise Performance Management Cloud** provider.
 - Name the EPM Connect connection. For example, if integrating with Planning, a possible **Connection Name** could be **PBCS**.
 - Specify the connection URL.
 - Specify the user credentials.
 - Additionally for **Other Web Service Provider**, you must specify advanced options. Click **Show Advanced Options**.
 - For **Type**, select **Parameter**.
 - For **Name**, enter SERVICE_TYPE (this is a fixed value).
 - For **Value**, enter EDMCS (this is a fixed value).

For more information about connecting EPM Cloud subscriptions, see Connecting Environments in EPM Cloud .
2. On the Home page, click **Application**, and then click **Task Manager**.
3. Click the **Integrations** tab on the left.
4. From the **Integrations** page, click **Manage Connections**.

- On **Manage Connections**, from **Actions**, select **Sync EPM Connections**.



A message displays the progress of the synchronization, and details the integrations added to the service. An Integration Type and Task Type is added for each Integration.

See also:

- [End User Integrations for EPM Cloud](#)
- [Automation Integrations for EPM Cloud](#)

End User Integrations for EPM Cloud

End user integrations allow you to access functionality in other remote EPM Cloud environments while using Task Manager. This section lists the available end user integrations for these EPM Cloud services:

- Account Reconciliation
- Planning and Planning Modules
- Financial Consolidation and Close and Tax Reporting
- Profitability and Cost Management

For a description of the remote EPM Cloud functionality, see the documentation for that EPM Cloud service.

End User Integration Tasks for Account Reconciliation

- Console
- Data Exchange
- Reconciliation List (Period, Saved List)
- Reports
- Transaction List (Period, Saved List)

End User Integrations for Financial Consolidation and Close

- Approvals
- Configure Application
- Data Exchange
- Enter Form Data (Form)
Required parameter is Form (EPM Artifact Type) displayed in drop down list in Task Details dialog.
- Export Data
- Export Metadata
- Export Journal
- Generate Financial Report
Required parameter is the choice of report from drop down.
- Import Data
- Import Metadata
- Import Journal
- Invalid Intersections Report
- Generate Intercompany Matching Report
- Generate Journal Report
- Manage Approvals
- Manage Dimensions
- Manage Forms
- Manage Journals
- Manage Ownership
- Manage Periods
- Manage Valid Intersections
- Refresh Application
- Reports
- View Dashboard (Dashboard)
Required parameter is Dashboard (EPM Artifact Type) displayed in the drop down list in the Task Details dialog.
- View Financial Reports
- View Operational Dashboard

End User Integrations for Tax Reporting

- Approvals
- Configure Application
- Data Exchange
- Enter Form Data (Form)
Required parameter Form (EPM Artifact Type) displayed in drop down list in Task Details dialog.

- Export Data
- Export Metadata
- Generate Financial Report
Required parameter is the choice of report from drop down.
- Import Data
- Import Metadata
- Invalid Intersections Report
- Manage Approvals
- Manage Dimensions
- Manage Forms
- Manage Periods
- Manage Valid Intersections
- Refresh Application
- Reports
- View Dashboard (Dashboard).
Required parameter is Dashboard (EPM Artifact Type) displayed in the drop down list in the Task Details dialog
- View Financial Reports
- View Operational Dashboard

End User Integrations for Planning and Planning Modules

- Approvals
- Data Exchange
- Enter Form Data (Form)
Required parameter is Form (EPM Artifact Type) displayed in drop down list in Task Details dialog.
- Generate Financial Report
Required parameter is the choice of report from drop down.
- Invalid Intersections Report
- Manage Approvals
- Manage Dimensions
- Manage Rules
- Manage Valid Intersections
- Reports
- View Dashboard (Dashboard).
Required parameter is Dashboard (EPM Artifact Type) displayed in the drop down list in the Task Details dialog
- View Financial Reports
- View Operational Dashboard

End User Integrations for Profitability and Cost Management

- Dashboards
- Data Exchange
- Generate Profitability Report
- Profit Curves (Profit Curve)
Required parameter is Profit Curve (EPM Artifact Type) displayed in drop down list in Task Details dialog.
- View Dashboard (Dashboard).
Required parameter is Dashboard (EPM Artifact Type) displayed in the drop down list in the Task Details dialog.
View Report (Report)

Automation Integrations for EPM Cloud

These pre-built integrations are available for EPM Cloud services:

- Account Reconciliation
- Enterprise Data Management
- Financial Consolidation and Close
- Planning and Planning Modules
- Profitability and Cost Management
- Tax Reporting

To use the pre-built EPM Cloud Integrations, you must specify parameters for the integration. Many parameters for automated integrations are selectable from drop-down lists, which eliminates the need to manually enter values. For example, to run a rule or ruleset, you can select from a list of business rules, such as ForceConsolidate or ForceTranslate.

Integrations for EPM Cloud (Common)

Integration Name / Module	Module	Description	Parameters/ Description
Copy File from Planning	All EPM Cloud Services except Enterprise Data Management	Copies a file from current service where Task Manager is configured to another EPM Cloud Service. For example, if you have configured Task Manager in Planning and set up Account Reconciliation connection, Copy File from Planning copies the file from Planning to Account Reconciliation.	File Name: Name of the file that you want to copy. Save File As: Name of the file that you want to save. This can be different than the original file name. External Directory Name (Optional): Name of the directory.

Integration Name / Module	Module	Description	Parameters/ Description
Copy File to Planning	All EPM Cloud Services except Enterprise Data Management	Copies a file to current service where Task Manager is configured from another EPM Cloud service.	File Name: Name of the file that you want to copy. Save File As: Name of the file that you want to save. This can be different than the original file name. External Directory Name (Optional): Name of the directory.
Delete File From Planning	All EPM Cloud Services except Enterprise Data Management	Deletes a file from a EPM cloud service.	File Name: Name of the file that you want to delete.
Lock Unlock Data Integration	All EPM Cloud Services except Enterprise Data Management	Locks or unlocks an integration for a location, category and period in Data Exchange. This is a process-automated integration.	Operation: Choose from lock or unlock. Lock Type: Choose whether the Lock/Unlock operation is for an application or a location. Period: Specify the period of the POV from the integration or data load rule defined in Data Exchange, for example, "Jan-21". Category: Specify the predefined Scenario value based on the POV Category from the integration (data rule) definition. The categories available are those that are created in the Data Integration set-up, such as "Actual." Application (Optional): If selected Lock Type is application, specify the name of application, for example, "Vision". Location (Optional): If selected Lock Type is location, specify the name of the location. If the location is locked, data cannot be loaded to it. Unlock By Location (Optional): This parameter can be specified when selected operation is lock and selected location is application. If checked when locking the target application, then the system locks all rules present in the location under target application and not the application-level lock. For more information, see Lock and Unlock POV

Integration Name / Module	Module	Description	Parameters/ Description
Run Data Integration	All EPM Cloud Services except Enterprise Data Management and Profitability and Cost Management	Execute an integration or data load rule based on how periods are processed and source filters. This allows the integration of data loads defined in Data Exchange easily into the monthly processing schedule.	<p>Job Type: Integration is the job type.</p> <p>Integration Name: The name of the integration defined in Data Integration.</p> <p>Period Name: Name of the period.</p> <p>Import Mode: Determines how the data is imported into Data Integration.</p> <p>Export Mode: Determines how the data is exported into Data Integration.</p> <p>File Name: Applicable only for native file-based data loads and ignored if specified for other loads.</p> <p>Source Filters: A parameter used to update the source filters defined for the data load rule or integration.</p> <p>Target Options: A parameter used to update the target options defined for the data load rule or integration.</p> <p>Execution Mode: Applicable only for Quick Mode integrations.</p> <p>For more details about these parameters, see Run Integrations in the <i>REST API for Oracle Enterprise Performance Management Cloud Guide</i>.</p>
Run Pipeline	All EPM Cloud Services except Enterprise Data Management and Account Reconciliation	Executes a pipeline based on job parameters and variables that you select.	<p>Job Type: Pipeline is the job type.</p> <p>Job Name: Pipeline code defined for the Pipeline in Data Integration.</p> <p>Start Period: The first period for which data is to be loaded. This period name must be defined in Data Integration Period mapping.</p> <p>End Period: The last period for which data is to be loaded. This period name must be defined in Data Integration period mapping.</p> <p>Import Mode: Determines how the data is imported into Data Integration.</p> <p>Export Mode: Determines how the data is exported into Data Integration.</p> <p>Attach Logs: Indicated whether logs are included as an attachment to an email.</p> <p>Send Email: Determines when an email is sent when a Pipeline is run.</p> <p>Send To: Determines the recipient email ID for the email notification.</p> <p>For more details about these parameters, see Running a Pipeline in the <i>REST API for Oracle Enterprise Performance Management Cloud Guide</i>.</p>

See also, [Copy and Delete Integration Files](#)

Integrations for Account Reconciliation

Integration Name / Module	Module	Description	Parameters/ Description
Change Period Status	Reconciliation Compliance	Changes the status of a period (Open, Closed, Pending, Locked).	Period: The name of the period Status: Pending, Open, Closed, Locked
Create Period End Reconciliations	Reconciliation Compliance	Copies all selected profiles to a period and returns success or failure status.	Period: The name of the period Filter: The name of the filter that matches the reconciliation
Import Balances	Reconciliation Compliance	Imports balance data using Data Management from a previously created Data Load definition.	Period: The name of the period dl_Definition: The name of a previously saved data load using the format DL_name such as DL_test
Import Pre-Mapped Balances	Reconciliation Compliance	Imports pre-mapped balances.	Period: The name of the period BalanceType: SUB SRC for sub system or source system CurrencyBucket: Currency bucket, such as Functional File: The name of the file relative to the inbox, for example, balances.csv. The file has to be uploaded to ARCS using EPM Automate or REST API.
Import Pre-Mapped Transactions	Reconciliation Compliance	Imports pre-mapped transactions for a particular period.	TransactionType: Allowed Transaction Types are BEX (Explained Balance), SRC (Adjustment to Source System), and SUB (Adjustment to Subsystem) File: The name of the file relative to the inbox, for example, transactions.csv. The file has to be uploaded to ARCS using EPM Automate or REST API. DateFormat: Date Format, such as MM/dd/yyyy, dd/MM/yyyy, dd-MMM-yy, MMM d,yyyy, or All.

Integration Name / Module	Module	Description	Parameters/ Description
Import Pre-Mapped Transactions	Transaction Matching	Imports a file of pre-mapped transactions into Transaction Matching.	<p>DataSource: Text ID of the data source where the transaction will be imported to</p> <p>File: The name of the file relative to the inbox, for example, transactions.csv. The file has to be uploaded to ARCS using EPM Automate or REST API.</p> <p>ReconciliationType: Text ID of the reconciliation type where the transaction file will be imported to, such as Bank to GL.</p> <p>DateFormat: Date Format, such as MM/dd/yyyy, dd/MM/yyyy, MM-dd-yyyy, d-M-yyyy, dd-MMM-yy, MMM d, yyyy</p>
Import Profiles	Reconciliation Compliance	Imports profiles for a particular period.	<p>ImportType: The import type. Supported values are Replace and ReplaceAll</p> <p>Period: The period for which to import</p> <p>ProfileType: The profile type. Supported values are Profiles and Children</p> <p>File: The name of the file relative to the inbox, for example, profiles.csv. The file has to be uploaded to ARCS using EPM Automate or REST API.</p> <p>DateFormat: Date Format, such as MM/dd/yyyy, dd/MM/yyyy, d-M-yyyy, dd-MMM-yy, MMM d, yyyy, or All</p>

Integration Name / Module	Module	Description	Parameters/ Description
Import Rates	Reconciliation Compliance	Imports rates for a particular period and rate type.	<p>Period: The name of the period</p> <p>RateType: The rate type, such as Accounting</p> <p>Import Rates (Reconciliation Compliance)</p> <p>File: The name of the file relative to the inbox, for example, rates.csv. The file has to be uploaded to ARCS using EPM Automate or REST API.</p> <p>ImportType: Supported import types are Replace and ReplaceAll</p>
Monitor Reconciliations	Reconciliation Compliance	Monitors list of reconciliations in ARCS.	<p>Period: The name of the period</p> <p>Filter: Filter string used to query list of reconciliations</p>
Run Auto Match	Transaction Matching	Runs the auto match process in Transaction Matching.	ReconTypeId: The Text ID of the Reconciliation type to be auto matched
View Reconciliations	Reconciliation Compliance	View reconciliations for a specified period.	<p>Period: The name of the period</p> <p>Saved List: The name of a Public saved list</p>
View Transactions	Transaction Matching	View transactions for a specified period.	<p>Period: The name of the period</p> <p>Saved List: The name of a Public saved list</p>

Integrations for Enterprise Data Management

Integration Name	Description	Parameters/ Description
Export Dimension	Exports a dimension from Enterprise Data Management to a configured connection. This is a process-automated integration. See Adding Pre-built Integrations within the EPM Cloud .	<p>Application: The name of the Enterprise Data Management application from which to export the dimension.</p> <p>Dimension: The name of the dimension to export.</p> <p>Connection: Optional. The name of the connection to which to export the dimension.</p> <p>File Name: The file and path from which to export the dimension.</p>

Integration Name	Description	Parameters/ Description
Export Dimension Mapping	Exports a Dimension Mapping from Enterprise Data Management to a configured connection. This is a process-automated integration.	<p>Application: The name of the Enterprise Data Management application from which to export the Dimension Mapping.</p> <p>Dimension: The name of the Dimension Mapping to export.</p> <p>Connection: Optional. The name of the connection to which to export the Dimension Mapping.</p> <p>Mapping Location: The location to which to export the Dimension Mapping.</p> <p>File Name: The file and path from which to export the Dimension Mapping.</p>
Import Dimension	Imports a Dimension from a configured connection to an Enterprise Data Management application. This is a process-automated integration. See Adding Pre-built Integrations within the EPM Cloud .	<p>Application: The name of the Enterprise Data Management application to which to import the dimension.</p> <p>Dimension: The name of the dimension to import.</p> <p>Connection: The name of the connection from which to import the dimension.</p> <p>File Name: The file and path from which to import the dimension.</p> <p>Import Option: Optional. Determines how the data is imported into Enterprise Data Management.</p>
Extract Dimension	Extracts a dimension from Enterprise Data Management to a configured connection. This is a process-automated integration.	<p>Application: The name of the Enterprise Data Management application from which to extract the dimension.</p> <p>Dimension: The name of the dimension to extract.</p> <p>Extract: The name of the extract.</p> <p>Connection: The name of the connection to which to extract the dimension.</p> <p>File Name: The file and path from which to extract the dimension.</p>

Integrations for Financial Consolidation and Close and Tax Reporting

Integration Name	Description	Parameters/ Description
Clear Cube Note: This integration is applicable only for Tax Reporting.	Clears specific data within input and reporting cubes.	Name: Name of the clear cube job.

Integration Name	Description	Parameters/ Description
Copy Ownership Data to Next Year	Automates task to copy the ownership data from the last period of a year to the first period of the next year. For more information, see copyOwnershipDataToNextYear in <i>Working with EPM Automate for Oracle Enterprise Performance Management Cloud</i> .	Scenario: The name of the scenario, such as Actual, selectable Years: Selectable
Cube Refresh	Refreshes the OLAP cube.	Name: Name of the refresh cube job.
Clear Data	Executes a Clear Data job using the profile name. For more information about using Clear Data in Financial Consolidation and Close, see Clear Data . For more information about using Clear Data in Tax Reporting, see Clear Data .	Profile Name: Clear data profile name.
Copy Data	Executes a Copy Data job using the profile name. For more information about using Copy Data in Financial Consolidation and Close, see Copy Data . For more information about using Copy Data in Tax Reporting, see Copy Data .	Profile Name: Copy data profile name.
Export Data	Exports application data into a file using the export data settings, including file name, specified in a job of type export data. The file containing the exported data is stored in the repository.	Name: Name of the export data job. Export File Name: Optional . File name to which data is to be exported.
Export Data Mapping	Exports a Data Mapping defined in Data Management to a specified location. This is a process-automated integration. For more information, see Adding Pre-built Integrations within the EPM Cloud . Member mappings define relationships between source members and target dimension members within a single dimension.	Dimension: The dimension name for a specific dimension to import, such as ACCOUNT, or ALL to import all dimensions. File Name: The file and path from which to export mappings. The file format can be .CSV, .TXT, .XLS, or .XLSX. Include the outbox in the file path, for example, outbox/BESSAPPJan-06.csv. Location Name: The name of the location to which to export.

Integration Name	Description	Parameters/ Description
Export Ownership Data	Automates task to export ownership data from a entity to a comma-delimited CSV file. For more information, see exportOwnershipData in <i>Working with EPM Automate for Oracle Enterprise Performance Management Cloud</i> .	Entity: The name of the entity. Scenario: The name of the scenario, such as Actual. Selectable. Years: Selectable Period: The name of the period, such as January. Selectable. File Name: The name of the file to export.
Import Data	Imports data from a file in the repository into the application using the import data settings specified in a job of type import data.	Name: Name of the import data job. Import File Name: Optional . File name from which data is to be imported.
Import Data Mapping	Imports a Data Mapping defined in Data Management to a specified location. This is a process-automated integration. Member mappings define relationships between source members and target dimension members within a single dimension. You can import member mappings from a selected Excel, .CSV or .TXT file.	Job Type: The job type, MAPPINGIMPORT. Job Name: The dimension name for a specific dimension to import, such as ACCOUNT, or ALL to import all dimensions. File Name: The file and path from which to import mappings. The file format can be .CSV, .TXT, .XLS, or .XLSX. The file must be uploaded prior to importing, either to the inbox or to a sub-directory of the inbox. Include the inbox in the file path, for example, inbox/BESSAPPJan-06.csv. Import Mode: MERGE to add new rules or replace existing rules, or REPLACE to clear prior mapping rules before import. Validation Mode: Whether to use validation mode: true or false. An entry of true validates the target members against the target application; false loads the mapping file without any validations. Note that the validation process is resource intensive and takes longer than the validation mode of false; the option selected by most customers is false. Location Name: The Data Management location where the mapping rules should be loaded. Mapping rules are specific to a location in Data Management.

Integration Name	Description	Parameters/ Description
Import Metadata	Imports metadata from a file in the repository into the application using the import metadata settings specified in a job of type import metadata.	Name: The name of a batch defined in import metadata.
Import Ownership Data	Automates task to import ownership data from a CSV file available in the environment into a period. For more information, see importOwnershipData in <i>Working with EPM Automate for Oracle Enterprise Performance Management Cloud</i> .	Scenario: The name of the scenario, such as Actual. Selectable. Years: Selectable Period: The name of the period, such as January. Selectable. File Name: The name of the file to import.
Journal Period	Opens or closes a journal period automatically. The system will close the period only if there are no Approved and Unposted journals. If there are Approved and Unposted journals, the system will not close the period, and returns an error. If there are Unposted journals in Working and Submitted status, the system will close the period, with a warning.	Scenario: The name of the scenario, such as Actual Year: The year, such as FY20 Period: The name of the period, such as January Action: Open or Close
Monitor Enterprise Journals Note: This integration is applicable only for Financial Consolidation and Close.	Monitors the completion status of Journals within a Year/Period or filtered list.	Year: Optional. The year, such as 2022. Selectable. Period: Optional. The name of the period, such as January. Selectable. Filter Name: Optional. The name of the Filter you created to monitor the status of the Enterprise Journals. Note: Though all the parameters are optional, you must specify at least a Filter Name or Year and Period.
Recompute Ownership Data	Automates task for recomputing of ownership data. For more information, see recomputeOwnershipData in <i>Working with EPM Automate for Oracle Enterprise Performance Management Cloud</i> .	Scenario: The name of the scenario, such as Actual Years: The year, such as FY20 Period: The name of the period, such as January

Integration Name	Description	Parameters/ Description
Run Batch Rule	Executes a batch of jobs that have been defined in Data Management.	<p>Name: The name of the report to be executed, such as Dimension Map For POV (Dimension, Cat, Per) Path</p> <p>Report Format Type: The file format of the report - PDF, XLSX, or HTML</p> <p>Parameters: Can vary in count and values based on the report</p> <p>Location: The location of the report, such as Comma_Vision</p> <p>Run As: You must specify this parameter in the Workflow tab.</p>
Run Business Rule	Launches a business rule.	<p>Name: The name of a business rule exactly as it is defined.</p> <p>Parameters: Run time prompts in JSON syntax. Parameter name should exactly be same as defined in rule definition. For example,</p> <pre>{ "MyScenario1": "Current", "MyVersion1": "BU Version_1", "ToEntity": "CA", "Rule_Level_Var": "AZ", "planType": "Plan1" }</pre> <p>Following format is also supported, example:</p> <pre>"Scenario=Actual" "Entity=Total Geography" "Year=FY21" "Period=Apr"</pre>
Run Business Rule Set	Launches a business rule set. Rule sets with no runtime prompts or runtime prompts with default values will be supported.	<p>Name: The name of a business rule set exactly as it is defined.</p> <p>Parameters: Run time prompts in JSON syntax. Parameter name should exactly be same as defined in rule definition. For example,</p> <pre>{ "MyScenario1": "Current", "MyVersion1": "BU Version_1", "ToEntity": "CA", "Rule_Level_Var": "AZ", "planType": "Plan1" }</pre> <p>Following format is also supported, example:</p> <pre>"Scenario=Actual" "Entity=Total Geography" "Year=FY21" "Period=Apr"</pre>

Integration Name	Description	Parameters/ Description
Run Consolidation	This task is a utility task to run consolidation. Task will prompt user to enter parameters for running the tasks such as Scenario, Year, Period and Entity.	Scenario Year Period Entity: Multiple entities can be added with comma separator.

Integration Name	Description	Parameters/ Description
Run Data Rule	Executes a Data Management data load rule based on the start period and end period, and import or export options that you specify.	<p>Job Name: The name of a data load rule defined in Data Management.</p> <p>Start Period: The first period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>End Period: The last period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>Import Mode: Determines how the data is imported into Data Management.</p> <p>APPEND to add to the existing rule</p> <p>POV data in Data Management</p> <p>REPLACE to delete the POV data and replace it with the data from the file</p> <p>RECALCULATE to skip importing the data, but re-process the data with updated Mappings and Logic Accounts.</p> <p>NONE to skip data import into Data Management staging table</p> <p>Export Mode: Determines how the data is exported into Data Management.</p> <p>STORE_DATA to merge the data in the Data Management staging table with the existing Financial Consolidation and Close or Tax Reporting data</p> <p>ADD_DATA to add the data in the Data Management staging table to Financial Consolidation and Close or Tax Reporting</p> <p>SUBTRACT_DATA to subtract the data in the Data Management staging table from existing Financial Consolidation and Close or Tax Reporting data</p> <p>REPLACE_DATA to clear the POV data and replace it with data in the Data Management staging table. The data is cleared for Scenario, Version, Year, Period, and Entity</p> <p>NONE to skip data export from Data Management to Financial</p>

Integration Name	Description	Parameters/ Description
		Consolidation and Close or Tax Reporting File Name: Optional . If you do not specify a file name, this API imports the data contained in the file name specified in the load data rule. The data file must already reside in the INBOX prior to data rule execution. Run As: You must specify this parameter in the Workflow tab.
Run Force Consolidation	This task is a utility task to run force consolidation. The task will prompt the user to enter parameters for running the tasks such as Scenario, Year, Period and Entity.	Scenario Year Period Entity: Multiple entities can be added using a comma separator.
Run Force Translation	This task is a utility task to run force translation. The task will prompt user to enter parameters for running the tasks such as Scenario, Year, Period and Entity.	Scenario Year Period Entity: Multiple entities can be added with comma separator.
Run Translation	This task is a utility task to run translation. The task will prompt user to enter parameters for running the tasks such as Scenario, Year, Period and Entity.	Scenario Year Period Entity: Multiple entities can be added with comma separator.

Integrations for Planning and Planning Modules

Integration Name	Description	Parameters/ Description
Clear Cube	Clears specific data within input and reporting cubes.	Name: Name of the clear cube job.
Cube Refresh	Refreshes the OLAP cube.	Name: Name of the refresh cube job.
Export Data	Exports application data into a file using the export data settings, including file name, specified in a job of type export data. The file containing the exported data is stored in the repository.	Name: Name of the export data job. Export File Name: Optional . File name to which data is to be exported.
Import Data	Imports data from a file in the repository into the application using the import data settings specified in a job of type import data.	Name: Name of the import data job. Import File Name: Optional . File name from which data is to be imported.

Integration Name	Description	Parameters/ Description
Import Metadata	Imports metadata from a file in the repository into the application using the import metadata settings specified in a job of type import metadata.	Name: The name of a batch defined in import metadata.
Run Batch	Executes a batch of jobs that have been defined in Data Management.	Name: The name of the report to be executed, such as Dimension Map For POV (Dimension, Cat, Per) Path Report Format Type: The file format of the report, PDF, XLSX, or HTML Parameters: Can vary in count and values based on the report Location: The location of the report, such as Comma_Vision
Run Business Rule	Launches a business rule.	Name: The name of a business rule exactly as it is defined. Parameters: Run time prompts in JSON syntax. Parameter name should exactly be same as defined in rule definition. For example, <pre>{ "MyScenario1": "Current", "MyVersion1": "BU Version_1", "ToEntity": "CA", "Rule_Level_Var": "AZ", "planType": "Plan1" }</pre> Following format is also supported, example: "Scenario=Actual" "Entity=Total Geography" "Year=FY21" "Period=Apr"
Run Business Ruleset	Launches a business ruleset. Rulesets with no runtime prompts or runtime prompts with default values will be supported.	Name: The name of a business ruleset exactly as it is defined. Parameters: Run time prompts in JSON syntax. Parameter name should exactly be same as defined in rule definition. For example, <pre>{ "MyScenario1": "Current", "MyVersion1": "BU Version_1", "ToEntity": "CA", "Rule_Level_Var": "AZ", "planType": "Plan1" }</pre> Following format is also supported, example: "Scenario=Actual" "Entity=Total Geography" "Year=FY21" "Period=Apr"

Integration Name	Description	Parameters/ Description
Run Data Rule	Executes a Data Management data load rule based on the start period and end period, and import or export options that you specify.	<p>Job Name: The name of a data load rule defined in Data Management.</p> <p>Start Period: The first period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>End Period: The last period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>Import Mode: Determines how the data is imported into Data Management.</p> <p>APPEND to add to the existing rule</p> <p>POV data in Data Management</p> <p>REPLACE to delete the POV data and replace it with the data from the file</p> <p>RECALCULATE to skip importing the data, but re-process the data with updated Mappings and Logic Accounts.</p> <p>NONE to skip data import into Data Management staging table</p> <p>exportMode: Determines how the data is exported into Data Management.</p> <p>STORE_DATA to merge the data in the Data Management staging table with the existing Oracle Hyperion Planning data</p> <p>ADD_DATA to add the data in the Data Management staging table to Planning</p> <p>SUBTRACT_DATA to subtract the data in the Data Management staging table from existing Planning data</p> <p>REPLACE_DATA to clear the POV data and replace it with data in the Data Management staging table. The data is cleared for Scenario, Version, Year, Period, and Entity</p> <p>NONE to skip data export from Data Management to Planning</p> <p>File Name: Optional. If you do not specify a file name, this API imports the data contained in the file name specified in the</p>

Integration Name	Description	Parameters/ Description
		load data rule. The data file must already reside in the INBOX prior to data rule execution.

Integrations for Profitability and Cost Management

Integration Name	Description	Parameters/ Description
Apply Data Grants	Applies data grants for a given Oracle Profitability and Cost Management Cloud application. This API submits a job to create and apply the data grants in Essbase. This API removes all existing data grants in Essbase and recreates them with the latest information from the application. It can also be used to repair data grants if there are any issues.	None
Deploy ML Cube	Deploy or redeploy the calculation cube for a selected Oracle Profitability and Cost Management Cloud application.	isKeepData: Specify whether to preserve existing data isReplacecube: Specify whether to replace existing comment: Any user comments

Integration Name	Description	Parameters/ Description
Run ML Calc	Run or clear calculations for a selected application. Use with Management Ledger.	<p>povGroupMember: The POV group member for which to run calculations, such as 2015_January_Actual</p> <p>isClearCalculated: Whether to clear the calculation data, true or false</p> <p>subsetStart: Rule Set Starting Sequence Number</p> <p>subsetEnd: Rule Set Ending Sequence Number</p> <p>Rule: Rule Name for a SINGLE_RULE</p> <p>ruleSetName: Rule Set Name for a SINGLE_RULE option</p> <p>exeType: The execution type specifies which rules to run; possible values are ALL_RULES, RULESET_SUBSET, SINGLE_RULE. Other parameters are required based on the exeType value.</p> <p>exeType: ALL_RULES overrides all other options such as subsetStart, subsetEnd, ruleSetName, ruleName, and so on.</p> <p>exeType: RULESET_SUBSET considers only subsetStart and subsetEnd.</p> <p>exeType: SINGLE_RULE considers only ruleSetName and ruleName.</p> <p>Comment: Use comment text.</p> <p>Delimiter: String delimiter for POV group members, such as an underscore (_).</p>
Clear ML POV	Clear model artifacts and data from a POV combination for any application.	<p>POV GroupMember: The POV group member for which to run calculations, such as 2015_January_Actual</p> <p>isManageRule: Whether to clear the program rule details</p> <p>isInputData: Whether to clear input data</p> <p>IsAllocatedValues: Whether to clear allocated values</p> <p>stringDelimiter: String delimiter for POV group members</p>

Integration Name	Description	Parameters/ Description
Copy ML POV	Copy model artifacts and data from a Source POV combination to a Destination POV combination for any application. Use with Management Ledger applications.	POVs: Included in the path srcPOVMemberGroup: Source POV member group, such as 2014_January_Actual destPOVMemberGroup: Destination POV member group, such as 2014_March_Actual isManageRule: Whether to copy the program rule details isInputData: Whether to copy input data modelViewName: To copy a slice of data from source POV to destination POV Create Dest POV: Whether to create the destination POV if it does not already exist String Delimiter: String delimiter for POV group members

Integration Name	Description	Parameters/ Description
Run Data Rule	Executes a Data Management data load rule based on the start period and end period, and import or export options that you specify.	<p>Job Name: The name of a data load rule defined in Data Management.</p> <p>Start Period: The first period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>End Period: The last period for which data is to be loaded. This period name must be defined in Data Management period mapping.</p> <p>Import Mode: Determines how the data is imported into Data Management.</p> <p>APPEND to add to the existing rule</p> <p>POV data in Data Management</p> <p>REPLACE to delete the POV data and replace it with the data from the file</p> <p>RECALCULATE to skip importing the data, but re-process the data with updated Mappings and Logic Accounts.</p> <p>NONE to skip data import into Data Management staging table</p> <p>Export Mode: Determines how the data is exported into Data Management.</p> <p>STORE_DATA to merge the data in the Data Management staging table with the existing Profitability and Cost Management data</p> <p>ADD_DATA to add the data in the Data Management staging table to Profitability and Cost Management</p> <p>SUBTRACT_DATA to subtract the data in the Data Management staging table from existing Profitability and Cost Management data</p> <p>REPLACE_DATA to clear the POV data and replace it with data in the Data Management staging table. The data is cleared for Scenario, Version, Year, Period, and Entity</p> <p>NONE to skip data export from Data Management to</p>

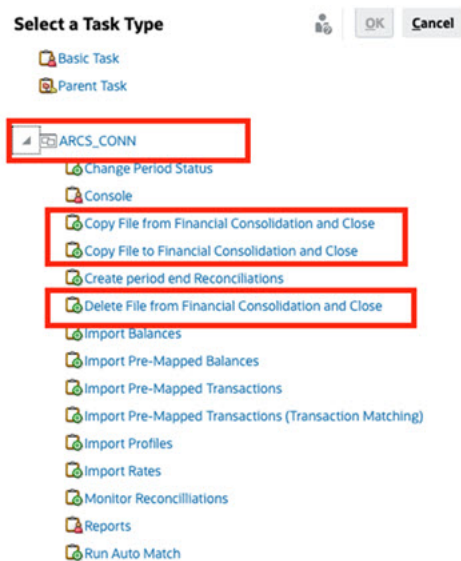
Integration Name	Description	Parameters/ Description
		Profitability and Cost Management
		File Name: Optional . If you do not specify a file name, this API imports the data contained in the file name specified in the load data rule. The data file must already reside in the INBOX prior to data rule execution.
Run Batch Rule	Executes a batch of jobs that have been defined in Data Management.	Job Name: The name of a batch defined in Data Management.
Update Dimension	Uploads a new dimension flat file for an application created using a flat file. This is a process-automated integration. For more information, see Update Dimensions As a Job .	File Name: Data file name Separator Character: Optional Parameter

Copy and Delete Integration Files

The following integrations are common for EPM Cloud:

- **Copy File from** <EPM Cloud Service>
- **Copy File to** <EPM Cloud Service>
- **Delete File from** <EPM Cloud Service>

Example



To perform these integrations:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.

- From the list of pre-built integrations, select **Copy File from** <EPM Cloud Service>. This copies a file from the Current Task Manager service to a Remote EPM Cloud Service. For example, if you have configured Task Manager in Planning and set up Account Reconciliation connection, **Copy File from Planning** copies the file from Planning to Account Reconciliation.

 **Note:**

This applies to all remote EPM Cloud services except Enterprise Data Management.

- Enter the following Parameters:

* File Name	<input type="text"/>
Save File As	<input type="text"/>
External Directory Name	<input type="text"/>

- **File Name:** Browse to and select the file that you want to copy.
 - **Save File As:** Enter a file name (which can be different than the original file name).
 - **External Directory Name (Optional):** Select the name of a directory.
 - Click **Save and Close**.
- Select **Copy File to** <EPM Cloud Service>. This copies a file to the current service where Task Manager is configured from another EPM Cloud service.

 **Note:**

This applies to all remote EPM Cloud services except Enterprise Data Management.

- Enter the following Parameters:
 - **File Name:** Browse to and select the file that you want to copy.
 - **Save File As:** Enter a file name (which can be different than the original file name).
 - **External Directory Name (Optional):** Select the name of a directory.
 - Click **Save and Close**.
- Select **Delete File from** <EPM Cloud Service>. This deletes a file from an EPM Cloud service.

 **Note:**

This applies to all remote EPM Cloud services except Enterprise Data Management.

- For **File Name**, browse to and select the file that you want to delete.

* File Name

- Click **Save and Close**.

See also, [Automation Integrations for EPM Cloud](#).

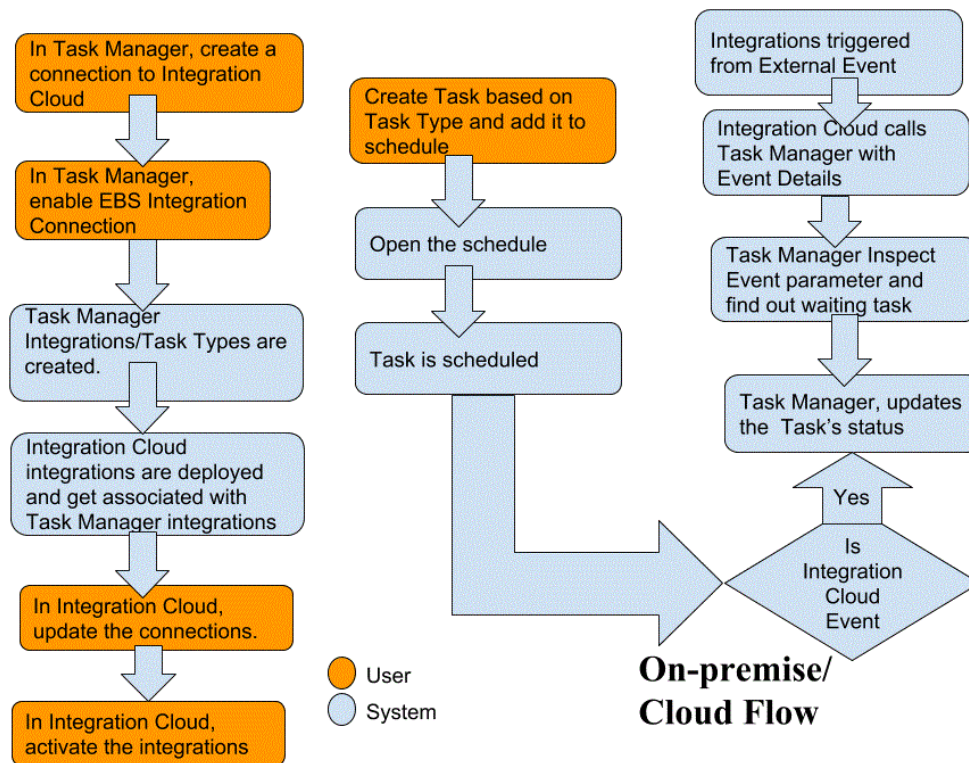
Managing Integrations with Cloud and On-Premises Applications

This appendix describes how to set up these pre-built Task Manager Integrations:

- Oracle Cloud ERP Integrations
- On-Premises Integrations
- On-Premises Oracle E-Business Suite Event Monitoring Integrations

EPM Cloud uses Oracle Integration cloud as an integration platform for Task Manager to perform automated tasks with non-EPM Cloud services.

The following diagram shows the system and user flow that applies to Planning:



End User Integrations for Oracle Cloud ERP

Task Manager end user integrations allow you to access functionality in remote Cloud environments. This section lists the available Task Manager end user integrations available for Oracle Cloud ERP.

For a description of the remote Cloud functionality, see the documentation for that Cloud service.

End User Integrations for Oracle Cloud ERP - Assets

- Asset Balances Reconciliation with General Ledger
- Asset Cost Summary
- Asset Reserve Summary
- Calculate Depreciation
- Calculate Deferred Depreciation
- Capitalize CIP Assets
- Create Assets Accounting
- Journal Entry Reserve Ledger Report
- Manage Asset Assignments
- Manage Asset Financial Transactions
- Manage Mass Retirements
- Manage Mass Transfers
- Periodic Mass Copy for Tax Books
- Period Close Exception Report
- Prepare Source Lines and Submit Post Mass Additions
- Reinstate Assets
- Retire Assets

End User Integrations for Oracle Cloud ERP - Cash Management

- Bank Statement Reconciliation
- Create Accounting
- Cash to General Ledger Reconciliation Report
- Subledger Period Close Exceptions Report

End User Integrations for Oracle Cloud ERP - General Ledger

- AutoPost Journals
- AutoReverse Journals
- Close General Ledger Periods
- Create Allocation Rules
- Create Balance Sheet Closing Journals
- Create Income Statement Closing Journals
- Extract Payables to General Ledger Reconciliation Data
- Extract Receivables to General Ledger Reconciliation Data
- Financial Reporting Center Work Area
- General Accounting Dashboard
- Generate Allocation Rules
- General Ledger Trial Balance

- General Ledger Average Trial Balance
- General Ledger Journals Report
- General Ledger General Journals Report
- General Ledger Journals Details Report
- General Ledger Journals Day Book Report
- General Ledger Journals Batch Summary Report
- General Ledger Account Details Report
- General Ledger Account Analysis for Contra Account Report
- General Ledger Average Balance Audit Account Analysis Report
- General Ledger Account Analysis Report
- General Ledger Trial Balance Report
- Import Journals
- Manage General Ledger Accounting Periods
- Manage Journals
- Open General Ledger Periods
- Period Close Dashboard
- Reconcile Payables to General Ledger
- Reconcile Receivables to General Ledger
- Revalue Balances
- Translation
- Transfer Balances Cross Ledgers
- Transfer Balances to Secondary Ledger

End User Integrations for Oracle Cloud ERP - Intercompany

- Intercompany Account Details Report
- Intercompany Reconciliation
- Intercompany Transaction Summary Report
- Intercompany Transactions Work Area
- Manage Intercompany Period Status
- Transfer Intercompany Transactions to General Ledger
- Transfer Intercompany Transactions to Receivables
- Transfer Intercompany Transactions to Payables

End User Integrations for Oracle Cloud ERP - Payables

- Apply Missing Conversion Rates
- Complete or Cancel Incomplete Payment Process Requests
- Create Payables Accounting
- Create Mass Additions
- Extract Payables to General Ledger Reconciliation Data

- Import Payables Invoices
- Import Payables Payment Requests
- Manage Payables Period
- Open Items Revaluation Report
- Payables Unaccounted Transactions Report
- Payables Invoices Landing Page
- Payables Unaccounted Transactions Report with Sweep Option
- Payables Trial Balance Report
- Period Close Exceptions Report
- Review Payables to General Ledger Reconciliation Report
- Transactions Pending Approvals
- Transfer Cost to Cost Management
- Update Matured Bills Payable Status
- Update Matured Bills Payable Status
- Validate Unvalidated Transactions

End User Integrations for Oracle Cloud ERP - Receivables

- Approve or Reject Customer Credits
- Billing Work Area
- Clear Receipts Automatically
- Create Automatic Billing Adjustments
- Create Automatic Receipt Batch
- Create Receipts Remittance Batch
- Create Late Charge Batch
- Create Automatic Receipt Write-Offs
- Create Receivables Accounting
- Extract Reconciliation Data From Receivables to General Ledger
- Import AutoInvoice: Master
- Manage Receivables Accounting Periods
- Manage Revenue Adjustments
- Receivables Balances Work Area
- Process Receipts Through Lockbox
- Recognize Revenue
- Receivables Aging by General Ledger Account Report
- Submit Subledger Period Close Exceptions Report

End User Integrations for Oracle Cloud ERP - Tax

- Tax Reconciliation Report
- Tax Reconciliation by Taxable Account Report

Application Token Values for Cloud ERP Integrations

Token Name: SERVER

Token Description: Property used for URL-based integration, for example, as in this fictitious URL: `https://customer_chosen_domain_name_fa.DC.oraclecloud.com`



Note:

Do not specify forward slash (/) at the end of the URL.

Pre-requisites to Display ERP Cloud Task in Task Manager

To display ERP Cloud task in Task Manager, Cloud ERP application must be enabled to display the site within iFrame. If you see a blank page with an error "refused to connect <Cloud ERP URL>" when opening the Cloud ERP , make sure you complete these pre-requisite.

1. Identity Cloud Service (IDCS) - Allow Authentication Via an iFrame
 - a. In the IDCS Admin Console, in the navigation tray, click **Settings** > **Session Settings**.
 - b. Enable the **All Cross-Origin Resource Sharing (CORS)** slider.
 - c. In **Allowed CORS Domain Names**, enter the EPM root URL
 - d. Click **Save**. See [IDCS - How to Allow Authentication Via an an iFrame](#).



Note:

If you are not using IDCS and using some other application for single sign on such as Okta, you must enable Cross-Origin Resource Sharing (CORS) in that application for EPM.

2. Request the Oracle Cloud ERP Applications administrator to enable Cross-Origin Resource Sharing (CORS) by adding the EPM Cloud root URL to the Oracle Cloud Application for the profile options:

- ORA_CORS_ORIGINS
- ORACLE.ADF.VIEW.ALLOWED_ORIGINS

To update the profile value:

- a. Login to Cloud ERP applications as an administrator.
- b. From the **User Admin** menu, go to **Setup And Maintenance**.
- c. Search for **Manage Administrator Profile Values**.
- d. Enter ORACLE.ADF.VIEW.ALLOWED_ORIGINS as the profile code and click **Search**.
- e. In the **Profile Values** section, specify the value. To access third party URL, include 'self' along with third party URL (use white space as separator). For example: 'self' <white space> <url>

See

- [Valid Value for ORACLE.ADF.VIEW.ALLOWED_ORIGINS to Avoid Fetching Data Issue](#)
- [How to use the ORACLE.ADF.VIEW.ALLOWED_ORIGINS profile option](#)

- [Administering Visual Builder Studio](#)
- f. Repeat the same steps for the ORA_CORS_ORIGINS profile option.

Event Monitoring Integrations for Oracle Cloud ERP

This section lists the out of box event monitoring integrations for Oracle Cloud ERP.



Note:

For custom process automation or event monitoring integration to Oracle Cloud ERP, see [Creating Custom Task Manager Integrations](#).

Supported Events for Oracle Cloud ERP General Ledger

The following events are supported for General Ledger:

Source	Event	Description
General Ledger	Accounting Period Closed	Signals when a general ledger accounting period is closed.
General Ledger	Accounting Period Opened	Signals when a general ledger accounting period is opened.
General Ledger	Accounting Period Reopened	Signals when a general ledger accounting period is reopened.
General Ledger	Journal Batch Approved	Signals when a journal batch is approved.
General Ledger	Journal Batch Posting Completed	Signals when a journal batch is posted.

Integrations Added to Existing Out of Box Connection

The table lists integrations that are added to monitor these business events from Task Manager, which includes:

- Integration Types in Task Manager
- Task Types in Task Manager
- Integration Flows in Integration Cloud

Connection Name	Integration Name	Integration Code	Event Name	Description	Parameter(s)
Oracle Cloud ERP - General Ledger	Period Close Event	R13GLPeriodClose	Accounting Period Closed	Oracle Cloud ERP General Ledger Period Close Event Monitoring	<p>LedgerName: Name of the Ledger. For example, US Primary Ledger.</p> <p>Period: Name of the Period. For example, 01-19.</p>

Connection Name	Integration Name	Integration Code	Event Name	Description	Parameter(s)
Oracle Cloud ERP - General Ledger	Period Open Event	R13GLPeriodOpen	Account Period Opened	Oracle Cloud ERP General Ledger Period Open Event Monitoring	LedgerName: Name of the Ledger. For example, US Primary Ledger. Period: Name of the Period. For example, 01-19.
Oracle Cloud ERP - General Ledger	Period Reopen Event	R13GLPeriodReopen	Accounting Period Reopened	Oracle Cloud ERP General Ledger Period Reopen Event Monitoring	LedgerName: Name of the Ledger. For example, US Primary Ledger. Period: Name of the Period. For example, 01-19.
Oracle Cloud ERP - General Ledger	Journal Approve Event	R13GLJournalBatchApprove	Journal Batch Approved	Oracle Cloud ERP General Ledger Journal Batch Approve Event Monitoring	BatchName: Journal Batch Name Period: Name of the Period. For example, 01-19.
Oracle Cloud ERP - General Ledger	Journal Post Event	R13GLJournalBatchPost	Journal Batch Posted	Oracle Cloud ERP General Ledger Journal Batch Post Event Monitoring	BatchName: Journal Batch Name Period: Name of the Period. For example, 01-19.

Setting Up the Integration in Task Manager

In Task Manager, you can create an Event Monitoring integration for Oracle Cloud ERP - General Ledger. The Event Monitoring integration is triggered when an external event occurs in another Cloud service or on-premises application.

Make sure the business events are enabled in Oracle Cloud ERP. You can verify the events using REST API. See these topics in the "ERP Business Events REST Endpoints" section of the *REST API for Oracle Financials Cloud* guide:

<https://docs.oracle.com/en/cloud/saas/financials/22d/farfa/api-erp-business-events.html>

To verify the events, see "Get all business event records".

If any event is not enabled, see "Update the enabled indicator for a business event".

Task Manager uses Oracle Integration Cloud for all the integrations to external applications. You can setup a connection to Oracle Integration Cloud in Task Manager using Basic or OAuth 2.0 authentication.

 **Note:**

- For Oracle Integration Cloud Generation 2, both Basic Auth and OAuth 2.0 is supported.
- For Oracle Integration Cloud Generation 3, only OAuth 2.0 is supported.
- Basic Auth user must have the Service Administrator role for Oracle Integration Cloud.
- For OAuth 2.0, only client credentials are supported. OAuth 2.0 client application should have the Service Administrator role for Oracle Integration Cloud and allowed scope should be all.

Before setting up the OAuth 2.0 connection, make sure you've the client credentials such as access token URL, client ID, client secret, and scope. For setting up the OAuth client application, see [OAuth Authentication in Oracle Integration](#) in Oracle Integration Cloud Generation 3 documentation.

To setup the Integration Cloud connection in Task Manager:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **Manage Connections**, and then from **Actions**, select **Integration Cloud Connection**.
4. Select one of the following authentication mechanisms:
 - **Basic Auth:** Specify the Integration Cloud URL, service administrator user ID, and password.
 - **OAuth 2.0:** Provide the Integration Cloud URL, access token URL, client ID, client secret, and scope.

 **Note:**

Enter the URL: `https://<SERVICE_NAME>-<TENANT_NAME>.integration.ocp.oraclecloud.com`

5. Click **Validate**. After validation is successful, click **Save**. This saves the server and credentials of the connection.

Enabling the Oracle Cloud ERP - General Ledger Connection

To enable the Oracle Cloud ERP - General Ledger connection:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left, then click **Manage Connections**.
3. Select **Oracle Cloud ERP - General Ledger** from the list, click **Actions**, and then select **Edit**.
4. In the **Edit Connection** dialog, select **Enabled**, and then click **OK**.
5. In the **Deploy to Integration Cloud** dialog, click **Generate**.

If the Oracle Cloud ERP - General Ledger connection is already enabled, deploy the integration flow to Oracle Integration Cloud by selecting the event monitoring integrations from the Integrations screen, and clicking **Deploy to Integration Cloud** from the toolbar. Then click **Generate** in the **Deploy to Integration Cloud** dialog.

The integration flow is deployed to the Integration Cloud and you can view the flow by logging in to Integration Cloud Services.

 **Note:**

The first time you enable the connection to Integration Cloud, all Integration Cloud deployments will fail during activation. The Administrator must activate the integrations in Integration Cloud. Before activating the integrations, the Administrator must set up the integration in Integration Cloud.

Setting Up the Integration Flow in Integration Cloud

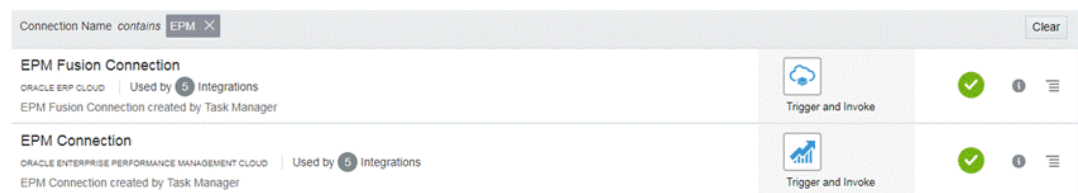
To set up the integration flow in Integration Cloud:

1. Log in to Integration Cloud Services.
2. Navigate to **Connections**.

EPM Fusion Connection and **EPM Connection** are automatically created.

3. Edit the connections by providing the environment and credential information. For details on prerequisites for creating a connection, see [Prerequisites for Creating a Connection](#).
 - **EPM Fusion Connection** is the connection to the Oracle Cloud ERP. See [Using the Oracle ERP Cloud Adapter](#) for more details.
 - **EPM Connection** is the connection to the EPM Cloud Service in Task Manager. See Using the [Oracle Enterprise Performance Management Cloud Adapter with Oracle Integration](#) for more details.

After configuring, testing, and saving the connections, you see a green check mark next to the connections.



4. Return to Task Manager and select **Integrations**.
5. Select the integration from the list, then click **Deploy to Integration Cloud** from the toolbar.
6. In the **Deploy to Integration Cloud** dialog, click **Generate**.

The Cloud Integration deployment is successful. Verify the activation status in the Integration Cloud by logging into the Oracle Integration Cloud service, then Integrations.

Adding the Event Monitoring Task to a Template or a Schedule

After the set up is complete, you can add the event monitoring tasks to a schedule or a template.

1. On the Home page, click **Application**, and then click **Task Manager**.

2. Click the **Templates** tab on the left and create a new template; for example, **ERP Event Template**.
3. Create the event monitoring task. See [Creating Tasks](#).
In the Task Type, make sure to select **Oracle Cloud ERP - General Ledger**, then select the event monitoring task; for example, **Period Open Event**.
4. In Task Manager, click **Template**, select **ERP Event Template**, and create a schedule. See [Creating Schedules from Templates](#).
5. In Task Manager, click **Schedules**, select the schedule, and change the status to **Open**.
You can monitor the schedule task in the **Schedule Tasks** screen.

Triggering the Period Close Event in Oracle Cloud ERP

To raise the Period Close event in Oracle Cloud ERP:

1. Login to Oracle Cloud ERP.
2. Select the **General Accounting** tab, then **Period Close**.
3. Click **General Ledger** and select the period, then click **Close Period**.

Accounting Period	Period Number	Year	Start Date	End Date	Status
07-19	7	2019	7/1/19	7/31/19	
06-19	6	2019	6/1/19	6/30/19	
05-19	5	2019	5/1/19	5/31/19	
04-19	4	2019	4/1/19	4/30/19	
03-19	3	2019	3/1/19	3/31/19	
02-19	2	2019	2/1/19	2/28/19	
01-19	1	2019	1/1/19	1/31/19	
Adj-18	13	2018	12/31/18	12/31/18	

4. Wait for a few minutes for the task to be completed. Then navigate to the **Schedule Tasks** screen in **Tasks** to verify the task is closed.

Triggering the Period Open/Reopen Event in Oracle Cloud ERP

To raise the Period Open event in Oracle Cloud ERP:

1. Login to Oracle Cloud ERP.
2. Select the **General Accounting** tab, then **Period Close**.
3. Click **General Ledger** and select the period, then click **Open Period**.
4. Wait for a few minutes for the task to be completed. Then navigate to the **Schedule Tasks** screen in **Tasks** to verify the task is closed.

Note:

If you open a period that has never been opened, the Period Open Event is triggered. If you open a period that has been closed before, the Period Reopen Event is triggered.

Triggering the Journal Batch Approved Event in Oracle Cloud ERP

To raise the Journal Batch Approved event in Oracle Cloud ERP:

1. Login to Oracle Cloud ERP.
2. Select the **General Accounting** tab, then **Journals**.
3. Click **Requiring My Approval** and select the journal batch, then click **Approve**.
4. Wait for a few minutes for the task to be completed. Then navigate to the **Schedule Tasks** screen in **Tasks** to verify the task is closed.

 **Note:**

You can trigger the Journal Batch Approved event only if it is the last approval in the multi level approval process.

Triggering the Journal Post Event in Oracle Cloud ERP

To raise the Journal Batch Approved event in Oracle Cloud ERP:

1. Login to Oracle Cloud ERP.
2. Select the **General Accounting** tab, then **Journals**.
3. Click **Tasks** and select **Create Journal**.
4. In **Create Journal** screen, specify the required information, then click **Save**.

 **Note:**

The journal batch name and accounting period should match the parameters of the task in the Task Manager schedule.

5. Wait for a few minutes for the task to be completed. Then navigate to the **Schedule Tasks** screen in **Tasks** to verify the task is closed.

End User Integrations for On-Premises Applications

Task Manager end user integrations allow you to access functionality in on-premises environments. This section lists the available Task Manager end user integrations for on-premises applications.

For a description of the on-premises functionality, see the documentation for that application.

End User Integrations for Hyperion Financial Management

- Load Data
- Load IC Transactions
- Load Journals
- Manage Documents
- Approve Journals
- Create Journals

- Data Grids
- Extract Data
- Extract ICT
- Extract Journals
- IC Matching Template Report
- Intercompany Match By Account Report
- Intercompany Match By Transaction ID Report
- Intercompany Reports
- Intercompany Transaction Report
- Journal Reports
- Ownership Management
- Post Journals
- Process Control
- Process ICT
- Task List
- Web Data Entry Forms

End User Integrations for Oracle E-Business Suite (EBS)

Accounts Payable Tasks

- Close Payable Period
- Expense Report Import
- Open Next Payable Period
- Payables Approval Workflow
- Review Holds and Release
- Open Interface Import (Payables Open Interface Import)
- Import Intercompany trans (Payables Open Interface Import)
- Validate All unvalidated Invoices (Invoice validation)
- Invoice on Hold Report
- Update Matured Payment Status (Update Matured Bills Payable Status)
- Transfer Journal Entries to GL
- Run Unaccounted Transaction Report (Unaccounted Transactions Report (XML))
- Run Unaccounted Transactions Sweep (Unaccounted Transactions Report (XML))
- Run Unaccounted Transactions Sweep Program (Unaccounted Transactions Report (XML))
- Invoice Posted Register Report (Payables Posted Invoice Register)
- Payment Posted Register Report (Payables Posted Payment Register)
- Run Payables Trial Balance Report (Accounts Payable Trial Balance)
- Mass Additions Create
- Run Payables Key Indicators Report (Key Indicators Report)

- Run Financial Tax Register (RX-only: Financial Tax Register)
- Run Tax Audit Trail Report
- Run Use Tax Liability Report
- Run Intra-EU VAT Audit Trail Report
- Run Withholding Tax Report (AP Withholding Tax Report)
- Generate Withholding Tax Letters (AP Withholding Tax Letter)

Accounts Receivable Tasks

- Approval Fina; AR Transaction Adjustments
- Create Final AR Transaction Adjustments
- Create Periodic Write-off
- Lock Box Receipts
- Open Subsequent Period Task
- Remove Manual Contingencies on Revenue
- Set Period to Close Pending
- Manually Apply Receipts
- Close Accounts Receivables Period
- Import Order Line Information for Invoice Creation (Autoinvoice Import Program)
- Import Order Line Information for Invoice Creation - Non-Oracle (Autoinvoice Import Program)
- Run Revenue Recognition (Revenue Recognition)
- Create Accounting
- Run Unposted AR Items Report (Unposted Items Report)
- Run Receipts Register Report (Applied Receipts Register)
- Create Final Accounting and Transfer to GL (Create Accounting)
- Generate Receivables to GL Reconciliation (AR Reconciliation Report)
- Run Receivables Analytic Reports (Key Indicators Report - Summary)

General Ledger Tasks

- Accounts Receivable Reconciliation
- Generate AutoAllocation to allocate rent expense
- Consolidate financial results to corporate
- Maintain revaluation currency rates
- Review allocation formula for rent expense
- Subledger source journals review
- Generate recurring journal for bad debt accrual
- Open New Accounting Period/Close Accounting Period
- Post subledger source journals
- Review revaluation set for foreign currency holdings
- Reverse prior period accruals

- Run preliminary income statement reports
- Consolidate financial results to corporate
- Run translation to parent currency
- Run preliminary detail trial balance reports (Trial Balance - Detail)
- Run foreign currency journals report (Journals - Entered Currency)

End User Integrations for Hyperion Profitability and Cost Management

- Job Library
- Manage Calculation
- Manage Database
- Manage Model Views
- Manage Queries
- Manage Rules
- Model Summary
- Model Validation
- POV Manager
- Rule Balancing
- System Reports
- Trace Allocations

End User Integrations for Oracle Fusion Assets

- Prepare Source Lines and Submit Post Mass Additions
- Capitalize CIP Assets
- Manage Asset Financial Transactions
- Manage Asset Assignments
- Retire Assets
- Reinstate Assets
- Manage Mass Financial Transactions
- Manage Mass Retirements
- Manage Mass Transfers
- Asset Balances Reconciliation with General Ledger
- Calculate Depreciation
- Periodic Mass Copy for Tax Books
- Journal Entry Reserve Ledger Report
- Calculate Deferred Depreciation
- Create Assets Accounting
- Asset Cost Summary
- Asset Reserve Summary
- Period Close Exception Report

End User Integrations for Oracle Fusion Cash Management

- Bank Reconciliations
- Create Accounting
- Subledger Period Close Exceptions Report
- Cash to General Ledger Reconciliation Report

End User Integrations for Oracle Fusion General Ledger

- Import Journals
- AutoPost Journals
- AutoReverse Journals
- General Allocation Rules
- General Ledger Trial Balance
- General Ledger Average Trial Balance
- General Ledger Journals Report
- General Ledger Journals Check Report
- General Ledger Journals Day Book Report
- General Ledger Journals Batch Summary Report
- General Ledger Report
- General Ledger Account Analysis for Contra Account Report
- General Ledger Average Balance Audit Account Analysis Report
- Revalue Balances
- Translation
- Extract Payables to General Ledger Reconciliation Data
- Extract Receivables to General Ledger Reconciliation Data
- Create Balance Sheet Closing Journals
- Create Income Statement Closing Journals
- Close General Ledger Periods
- Open General Ledger Periods
- Transfer Balances to Secondary Ledger
- Transfer Balances Cross Ledgers
- Review Journals Dashboard
- Manage Journals
- Period Close Dashboard
- Financial Reporting Center Work Area
- Launch Workspace for Financial Reports
- Reconcile Payables to General Ledger
- Reconcile Receivables to General Ledger

- Manage General Ledger Accounting Periods
- Create Allocation Rules
- General Ledger Account Analysis Report
- General Ledger General Journals Report
- General Ledger Trial Balance Report

End User Integrations for Oracle Fusion Intercompany

- Intercompany Transactions Work Area
- Manage Intercompany Period Status
- Transfer Intercompany Transactions to General Ledger
- Transfer Intercompany Transactions to Receivables
- Transfer Intercompany Transactions to Payables
- Intercompany Account Details Report
- Intercompany Transaction Summary Report

End User Integrations for Oracle Fusion Payables

- Import Transactions from External Systems
- Import Intercompany Transactions
- Import Expense Reports
- Validate Unvalidated Transactions
- Approve Transactions Requiring Approval
- Update Matured Bills Payable Status
- Apply Missing Conversion Rates
- Create Payables Accounting
- Payables Unaccounted Transactions Report
- Payables Unaccounted Transactions Report with Sweep Option
- Period Close Exceptions Report
- Open Items Revaluation Report
- Period End Reconciliation Reports
- Payables Trial Balance Report
- Extract Payables to General Ledger Reconciliation Data
- Create Mass Additions
- Transfer Cost to Cost Management
- Complete or Cancel Incomplete Payment Process Requests
- Close Payables Period
- Open Next Payables Period
- Review Payables to General Ledger Reconciliation Report

End User Integrations for Oracle Fusion Accounts Receivable

- Import AutoInvoice: Master
- Process Receipts Through Lockbox
- Create Automatic Receipt Batch
- Create Receipts Remittance Batch
- Clear Receipts Automatically
- Create Late Charge Batch
- Create Automatic Receipt Write-Offs
- Recognition Revenue
- Create Receivables Accounting
- Submit Subledger Period Close Exceptions Report
- Extract Reconciliation Data From Receivables to General Ledger
- Receivables Aging by General Ledger Account Report
- Run Period Close Reports
- Approve or Reject Customer Credits

End User Integrations for Oracle Fusion Tax

- Tax Reconciliation Report
- Tax Reconciliation by Taxable Account Report

End User Integrations for Hyperion Planning

- Business Rules
- Clear Cell Details
- Copy Data
- Copy Version
- Custom Links
- Data Form
- Data Load Settings
- Manage Currency Conversion
- Manage Data Forms
- Manage Dimensions
- Manage Exchange Rates
- Manage Menus
- Manage Process
- Manage Security Filters
- Manage Smart Lists
- Manage Task Lists
- Manage User Variables

- Planning Unit Hierarchy
- Scenario and Version Assignment
- Tasklists

End User Integrations for PeopleSoft 9.0

- Close Period for GL and Subsystems
- Run and Review PS/nVision Reports
- Process Subsystem and External Journals (Journal Generator)
- Enter Any Manual Journals
- Book Expense Accruals
- Enter Any Adjustment Vouchers
- Review/Correct Vouchers with Errors
- Review/Correct Match Exceptions
- Review Incomplete Deposits
- Resolve Pending Item Posting Errors
- Write Off Balances as Appropriate
- Update Doubtful Receivables
- Book Unbilled Revenue Accrual
- Finalize Unprocessed Bills
- Correct Billing Interface Errors
- Reconcile AP Control Accounts to GL
- Review Trial Balance report
- Reconcile AR Control Accounts to GL
- Reconcile Revenue (Billing) Accounts to GL
- Reconcile Asset Control Accounts to GL
- Review Expense Accruals
- Reconcile Open AP Liability Report to GL
- Review Aged AR Trial Balance

End User Integrations for PeopleSoft 9.1

- Close Period for GL and Subsystems
- Run and Review PS/nVision Reports
- Process Subsystem and External Journals (Journal Generator)
- Enter Any Manual Journals
- Book Expense Accruals
- Enter Any Adjustment Vouchers
- Review/Correct Vouchers with Errors
- Review/Correct Match Exceptions
- Review Incomplete Deposits

- Resolve Pending Item Posting Errors
- Write Off Balances as Appropriate
- Update Doubtful Receivables
- Book Unbilled Revenue Accrual
- Finalize Unprocessed Bills
- Correct Billing Interface Errors
- Reconcile AP Control Accounts to GL
- Review Trial Balance report
- Reconcile AR Control Accounts to GL
- Reconcile Revenue (Billing) Accounts to GL
- Reconcile Asset Control Accounts to GL
- Review Expense Accruals
- Reconcile Open AP Liability Report to GL
- Review Aged AR Trial Balance

Setting Up an Integration

Make sure you have the prerequisites and follow these steps to set up an integration between Task Manager and an external application.

Prerequisites

To integrate Task Manager with an on-premises application such as E-Business Suite, you need:

- A subscription to Oracle Integration Cloud Service.

 **Note:**

You need one Integration Cloud instance for each Planning instance.

- The on-premises application such as Oracle E-Business Suite (EBS) set up.
1. Subscribe to Oracle Integration Cloud / Oracle Autonomous Integration Cloud. See [Integration Cloud Service Documentation](#) for detailed information.
 2. Review and complete the pre-requisites in "Use Oracle E-Business Suite Business Events to Trigger Integration Endpoint in Oracle Integration Cloud" for EBS adapter in Oracle Integration Cloud: <https://docs.oracle.com/cloud/latest/related-docs/ICEBS/toc.htm>
 3. In Planning, from the Home page, select **Application**, and then click **Task Manager**.
 4. Click the **Integrations** tab on the left.
 5. Click **Manage Connections**.
 6. From **Manage Connections**, under **Actions**, select **Integration Cloud Connection**.

The screenshot shows a dialog box titled "Integration Cloud Connection" with a close button (X) in the top right corner. It contains three input fields:

- * URL: http(s)://myserver.domain.com:port
- * Service Administrator: (empty)
- * Password: (empty)

 Below the input fields are four buttons: "Validate", "Deploy", "Save", and "Close".

7. Specify the Integration Cloud connection URL and credentials and click **Validate**. After validation is successful, click **Save**. This saves the server and credential of the Planning connection.

 **Note:**

Task Manager uses Integration Cloud for all the integrations to external applications that are non-EPM Cloud. The external applications can be another Cloud service or an on-premises application such as E-Business Suite. These can be Process Automation or Event Monitoring integration types.

8. Do one of the following depending on whether the EBS connections for General Ledger and Account Payable connections are already enabled:
 - If the EBS connections for General Ledger and Account Payable are already enabled, click **Deploy** and then **Generate** to deploy the corresponding Integration Cloud integrations to Integration Cloud
 - If the EBS connections for General Ledger and Account Payable connections are not enabled:
 - a. In **Task Manager** within Planning, go to **Integrations**, then click **Manage Connections**.
 - b. Select and edit **E-Business Suite - General Ledger**. Select the **Enabled** check box and click **OK**. Then click **Deploy** and then **Generate**.
 - c. Repeat these steps for **E-Business Suite - Account Payables**.

The system creates the Integration Task Type and also deploys Integration Cloud integrations to Integration Cloud service.

 **Note:**

If you are doing this for first time and the connections in Integration Cloud are not completed, all the Integration Cloud deployments will fail during activation. This is expected. To fix this:

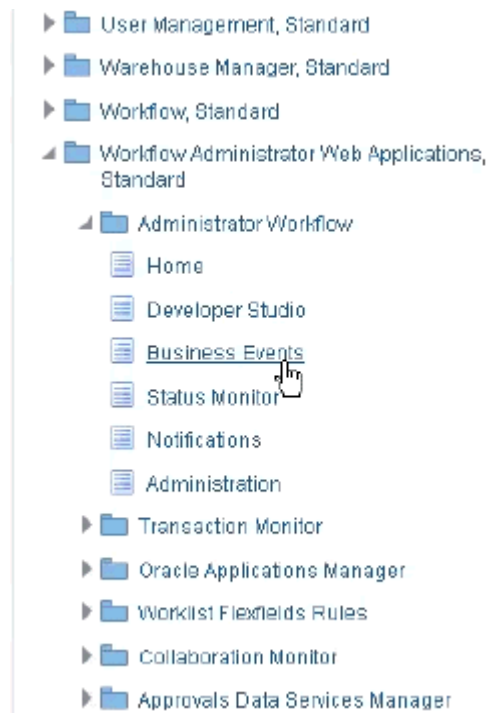
- a. Log in to Integration Cloud.
- b. Navigate to **Connections**. You will see two connections named **FCCS** and **EBS**. Optionally use **Search**.
Edit **FCCS** connection:
 - Click **Configure Connectivity** and enter FCCS url as <FCCS url>/HyperionPlanning/rest/cmapi/v1
 - Click **Configure Security** and enter the Service Administrator credential of your FCCS service. Then click **Test** and then **Save**.

 **Note:**

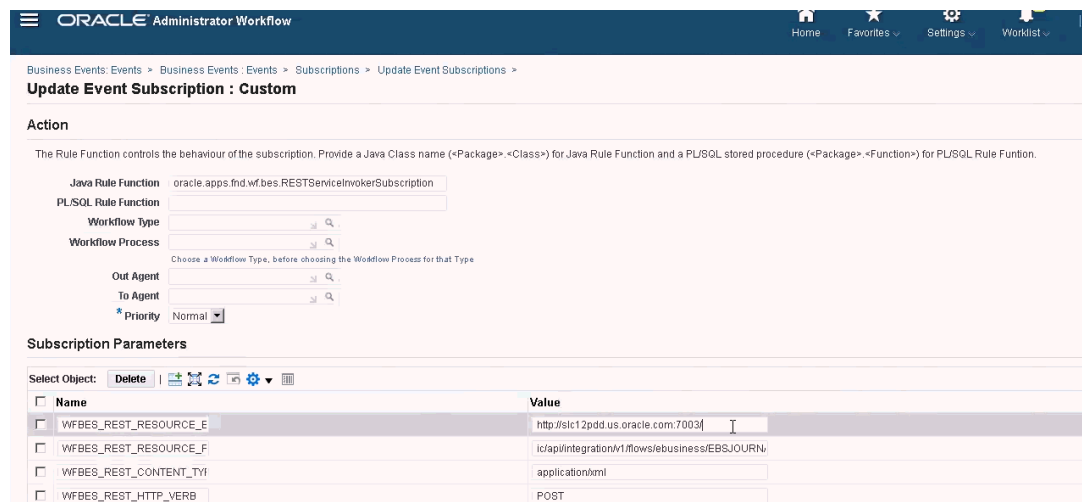
The Service administrator user ID should be in the format specified in the following link: <https://docs.oracle.com/en/cloud/saas/enterprise-performance-management-common/prest/authentication.html>

Edit **EBS** connection:

- Enter connection URL and credentials of your Oracle E-Business suite.
 - Click **Test** and then **Save**.
- c. From **FCCS**, open **Task Manager** and select **Manage Integrations**.
 - d. In **Manage Connections**, in **Actions** menu, select **Integration Cloud Connection** and click **Deploy** and then **Generate**. This time the deployment should complete without any errors.
9. Verify that the Integration - EBS linking is done properly. You can do this by logging in to Oracle E-Business Suite as administrator and verify the Integration Cloud REST service is added as subscriber for Business event. Here's an example:



Check that the Integration Cloud service was added. For example:



On-Premises Oracle E-Business Suite (EBS) Integration

These are the Task Manager Integrations for EBS Event Monitoring:

- EBSJournalApprove
- EBSJournalPost
- EBSJournalPeriodClose
- EBSJournalPeriodOpen
- EBSJournalPeriodReopen
- EBSAPJournalPeriodOpenClose

These are the events that can be monitored:

Table 12-20 Oracle E-Business Suite Events and Descriptions

Integration Name	Event Name	Description
Journal Approve Event	oracle.apps.gl.Journals.journal.approve	General Ledger: Journal Approved
Journal Post Event	oracle.apps.gl.Journals.journal.post	General Ledger: Posting Completed
Journal Period Close Event	oracle.apps.gl.CloseProcess.period.close	General Ledger: Period Closed
Journal Period Open Event	oracle.apps.gl.CloseProcess.period.open	General Ledger: Period Opened
Journal Period Reopen Event	oracle.apps.gl.CloseProcess.period.reopen	General Ledger: Period Reopened
Payables Period Open/Close Event	oracle.apps.ap.CloseProcess.period	Accounts Payables: Period Open/ Close/Reopen

Table 12-21 General Ledger Journals Integration Type Parameters

Name	Type	Required	Order	Hidden
Batch ID	Text	Yes	1	N

Table 12-22 General Ledger Close Process Period Integration Types Parameters

Name	Type	Required	Order	Hidden
LedgerID	Text	Yes	1	N
PeriodName	Text	Yes	2	N

Table 12-23 Accounts Payable Integration Types Parameters

Name	Type	Required	Order	Hidden
LedgerID	Text	Yes	1	N
PeriodName	Text	Yes	2	N
Action	Static List	Yes	3	N

Verifying Results by Raising Business Events

Once you have configured the EBS Business event system to subscribe to the required events, you can verify your results by raising business events. The following sections describe how to run the EBS tasks that raise the events you track.

General Ledger - Journal Approved

oracle.apps.gl.Journals.journal.approve

EBS Steps

1. Log on to **EBS**.
2. Select **General Ledger**, and then the **Vision Operations (USA)** role from the left tree.
3. Select **Journals**, and then **Enter** and wait for Oracle Applications to start.
4. Click **No** for the "Find records in this folder?" message.
5. On the Find Journals screen, click **New Batch**.
Window (Vision Operation (USA)) displays.
6. In **Batch**, enter a unique batch name.

 **Note:**

When you click **Save**, the cursor needs to be inside the Batch field.

7. Select **File** and then click **Save** to save the batch.

 **Note:**

When you save, the cursor needs to be inside the Batch field.

8. Click **OK** for the "**Please enter one or more Journals**" message.
9. Click **Journals**.
10. Enter a unique name in **Journal** field.
11. Provide Line entries starting with Line 1. Provide debit and credit values for the accounts.
12. After you finish entering the line values, move the cursor into the Journal field.
13. Navigate to the **File** menu and click **New**.
14. Click **Yes** for "**Do you want to save the changes you made?**" message.

 **Note:**

By clicking **Yes**, you will be able to add multiple Journal entries into the Batch.

After you finish the journal entries for the last Journal, move the cursor into the Journal field.

15. Select **File** and then click **Save** to save the last journal entry.
16. Focus on the Batch (Vision Operation (USA) and select **Batch** field.
17. Click **Help** and select **Diagnostics**, and then **Examine**.
18. Enter Oracle password:**APPS**.
19. In **Field**, enter **JE_BATCH_ID** and click inside **Value** to get the unique Journal batch ID. For example,
 - **Block:** BATCH
 - **Field:** JE_BATCH_ID

- **Value:** 4776732

Copy this value to Notepad. This batch ID will be used as the value for the `Batch ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for event monitoring task to monitor **Journal Approve Event** (`oracle.apps.gl.Journals.journal.approve`).
3. On the **Parameters** tab, provide a value for Batch ID as the journal batch ID from EBS.
4. Save the task and set the schedule to Open state.

Next Steps in EBS

1. On Batch (Vision Operation (USA), the Approve button is now enabled for the specified batch.
2. Click **Approve** to raise the journal approval event.

Next Steps in Task Manager

1. Wait for the task to be set to Open state. It takes a few minutes to capture the EBS event.
2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Refer to this document for further information on Journal Batch Approval related information:
http://download.oracle.com/docs/cd/A60725_05/html/comnls/us/gl/journa09.htm#t_ja_submit

General Ledger - Journal Post Event

`oracle.apps.gl.Journals.journal.post`

EBS steps

1. Log on to **EBS**.
2. Select **General Ledger**, and then the **Vision Operations (USA)** role from the left tree.
3. Select **Journals**, and then **Enter** and wait for Oracle Applications to start.
4. Click **No** for the "Find records in this folder?" message.
5. On the Find Journals screen, click **New Batch**.
Window (Vision Operation (USA) displays.
6. In **Batch**, enter a unique batch name.

Note:

When you click **Save**, the cursor needs to be inside the Batch field.

7. Select **File** and then click **Save** to save the batch.

Note:

When you save, the cursor needs to be inside the Batch field.

8. Click **OK** for the "**Please enter one or more Journals**" message.

9. Click **Journals**.
10. Enter a unique name in the **Journal** field.
11. Provide Line entries starting with Line 1. Provide debit and credit values for the accounts.
12. After you finish entering the line values, move the cursor into the Journal field.
13. Navigate to **File** and then click **New**.
14. Click **Yes** for "Do you want to save the changes you made?" message.

 **Note:**

By clicking **Yes**, you will be able to add multiple Journal entries into the Batch.

After you finish the journal entries for the last Journal, move the cursor into the Journal field.

15. Select **File** and then click **Save** to save the last journal entry.
16. Focus on the Batch (Vision Operation (USA) and select the **Batch** field.
17. Click **Help** and select **Diagnostics**, and then **Examine**.
18. Enter Oracle password: **APPS**.
19. In **Field**, enter **JE_BATCH_ID** and click inside **Value** to get the unique Journal batch ID. For example,
 - **Block:** BATCH
 - **Field:** JE_BATCH_ID
 - **Value:** 4776732

Copy this value to Notepad. This batch ID will be used as the value for the `Batch ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for event monitoring task to monitor Journal Approve Event (`oracle.apps.gl.Journals.journal.post`).
3. On the **Parameters** tab, provide a value for Batch ID as the journal batch ID from EBS.
4. Save task and set the schedule to Open state.

Next Steps in EBS

1. On the Batch (Vision Operation (USA), the Approve button is now enabled for the specified batch.
2. Click **Post** to raise the journal approval event.
3. Examine the status of EBS request by selecting the **View**, then **Requests**, then **Specific Requests**.
4. Specify the **Request ID** that was noted earlier.

Next Steps in Task Manager

1. Wait for the task to be set to Open state. It takes a few minutes to capture the EBS event.

2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Refer to this document for further information on Journal Batch Post related information: http://download.oracle.com/docs/cd/A60725_05/html/comnl/us/gl/conten07.htm#w_conts_post

General Ledger - Journal Period Close

`oracle.apps.gl.CloseProcess.period.close`

EBS Steps

1. Log on to **EBS**.
2. Select **General Ledger**, and then the **Vision Operations (USA)** role from the left tree.
3. Select **Open/Close**, and then **Enter** and wait for Oracle Applications to start.
The Find Periods dialog displays.
4. Click **Find**. The Open and Close Period dialog displays.
5. From the list of displayed periods, choose which one you want to close.
6. Select the **Status** column for that period.
7. Click **Status Options**. The status list box opens.
8. Select the **Closed** status and click **OK**. Then note the period in **Notepad**.
9. To save the status, select **File** and then click **Save**.
10. Select the **Status** column for that period.
11. Click **Help** and select **Diagnostics**, and then **Examine**.
12. Enter Oracle password: **APPS**.
13. In **Field**, enter **LEDGER_ID** and click inside **Value** to get the unique Ledger ID. For example,
 - **Block:** PREVIOUS
 - **Field:** LEDGER_ID
 - **Value:** 1

Copy this value to Notepad. This Ledger ID will be used as the value for the `LEDGER_ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for event monitoring task to monitor **Journal Close Event** (`oracle.apps.gl.CloseProcess.period.close`).
3. On the **Parameters** tab, provide a value for Ledger ID and Period Name from EBS. For example: Period Name: Dec-10 and Ledger ID: 1
4. Save the task and set the schedule to **Open** state.

Next Steps in EBS

1. Close the **Open and Close Period** dialog.
2. Click **OK** in the Submit Request Node message box.
3. Examine the status of EBS request by selecting **View**, then **Requests**, and then **Specific Requests**.

Next Steps in Task Manager

1. Wait for the task to be set to Open state. It takes a few minutes to capture the EBS event.
2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Refer to this document for more information on General Ledger Periods:

http://docs.oracle.com/cd/A60725_05/html/comnls/us/gl/openper.htm

General Ledger - Journal Period Open

`oracle.apps.gl.CloseProcess.period.open`

EBS Steps

1. Log on to **EBS**.
2. Select **General Ledger**, and then the **Vision Operations (USA)** role from the left tree.
3. Select **Open/Close**, and then **Enter** and wait for Oracle Applications to start.
The Find Periods dialog displays.
4. Click **Find**. The Open and Close Period dialog displays.
5. From the list of displayed periods, choose which one you want to open.
6. Copy the period you want to open in Notepad.
7. Select the **Status** column for that period.
8. Click **Help** and select **Diagnostics**, and then **Examine**.
9. Enter Oracle password:**APPS**.
10. In **Field**, enter **LEDGER_ID** and click inside **Value** to get the unique Ledger ID. For example,
 - **Block:** PREVIOUS
 - **Field:**LEDGER_ID
 - **Value:**1

Copy this value to Notepad. This Ledger ID will be used as the value for the `LEDGER_ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for an event monitoring task to monitor **Journal Period Open Event** (`oracle.apps.gl.CloseProcess.period.open`).
3. On the **Parameters** tab, provide a value for Ledger ID and Period Name from EBS. For example: Period Name: Dec-10 and Ledger ID: 1
4. Save the task and set the schedule to **Open** state.

Next Steps in EBS

1. Click **Open Period**.
2. Select the period to open and click **OK** to raise the event.
3. Examine the status of EBS request by selecting **View**, then **Requests**, and then **Specific Requests**.

Next Steps in Task Manager

1. Wait for the task to be set to open state. It takes a few minutes to capture the EBS event.
2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Refer to this document for more information on General Ledger Periods:

http://docs.oracle.com/cd/A60725_05/html/comnls/us/gl/openper.htm

General Ledger - Journal Period Reopen

`oracle.apps.gl.CloseProcess.period.reopen`

EBS Steps

1. Log on to **EBS**.
2. Select **General Ledger**, and then the **Vision Operations (USA)** role from the left tree.
3. Select **Open/Close**, and then **Enter** and wait for Oracle Applications to start.

The Find Periods dialog displays.

4. Click **Find**. The Open and Close Period dialog displays.
5. From the list of displayed periods, choose which one you want to reopen.
6. Copy the period you want to reopen in Notepad.
7. Select the **Status** column for that period.
8. Click **Help** and select **Diagnostics**, and then **Examine**.
9. Enter Oracle password: **APPS**.

10. In **Field**, enter **LEDGER_ID** and click inside **Value** to get the unique Ledger ID. For example,

- **Block:** PREVIOUS
- **Field:** LEDGER_ID
- **Value:** 1

Copy this value to Notepad. This Ledger ID will be used as the value for the `LEDGER_ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for an event monitoring task to monitor **Journal Period Reopen Event** (`oracle.apps.gl.CloseProcess.period.reopen`).
3. On the **Parameters** tab, provide a value for Ledger ID and Period Name from EBS. For example: Period Name: Dec-10 and Ledger ID: 1
4. Save task and set the schedule to **Open** state.

Next Steps in EBS

1. Click **Open Period**.
2. Select the closed period to open and click **OK** to raise the event.
3. Examine the status of EBS request by selecting **View**, then **Requests**, and then **Specific Requests**.

Next Steps in Task Manager

1. Wait for the task to be set to Open state. It takes a few minutes to capture the EBS event.

2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Refer to this document for more information on General Ledger Periods:

http://docs.oracle.com/cd/A60725_05/html/comnls/us/gl/openper.htm

Account Payables Period Open/Close

`oracle.apps.ap.CloseProcess.period`

EBS Steps

1. Log on to **EBS**.
2. Expand **Payables**, and then the **Vision Operations (USA)** role from the left tree.
3. Expand **Accounting**, and select **Control Payables Periods**. This launches the Control Payables Periods form.
4. Specify the Ledger and Operation Unit. Do not close the Find Payables Periods dialog. Instead, perform the following steps to identify the Ledger ID value.
5. Click **Help** and select **Diagnostics**, and then **Examine**.
6. If requested for credentials, specify the **APPS** schema credentials. The Examine Fields and Variable Values form displays.
7. In **Block**, enter **PERIOD_QF**. In **Field**, enter SET OF BOOKS, and click inside **Value**, to get the unique Ledger ID numeric value. For example,

- **Block:** PERIOD_QF
- **Field:** SET OF BOOKS
- **Value:** 1

Copy this value to Notepad. This Ledger ID will be used as the value for the `LEDGER_ID` parameter of the Event Monitoring task.

Next Steps in Task Manager

1. Create a new Schedule in Pending state.
2. Create a task for an event monitoring task to monitor **Payables Period Open/Close Event** (`oracle.apps.ap.CloseProcess.period`).
3. On the **Parameters** tab, provide a value for Ledger ID, Period Name and Action from EBS. For example, Ledger ID: 1, Period Name: Dec-10 and Action: Closed
4. Save the task and set the schedule to **Open** state.

Next Steps in EBS

1. Find the period in EBS Control Payables Periods.
2. Click on **Period Status** column for that period.
3. In **Control Statuses** form, select the appropriate status.
4. Select **File**, and then **Save** to raise the event.

Next Steps in Task Manager

1. Wait for the task to be set to Open state. It takes a few minutes to capture the EBS event.
2. After 2-3 minutes, click **Refresh** in **Task Manager**.

Note:

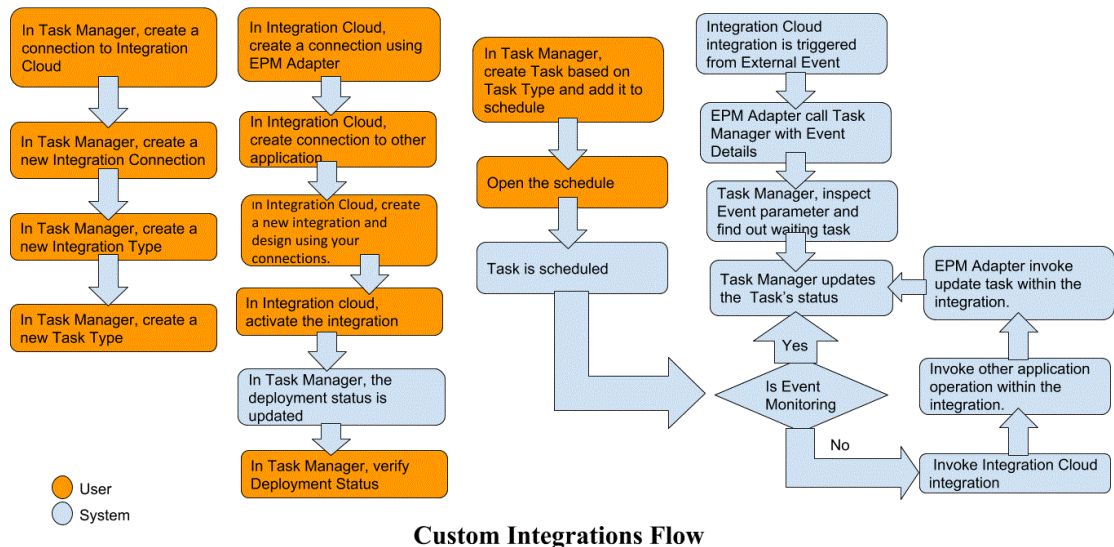
The EBS implementation raises the events only for Closed and Open statuses. Permanently Closed status will not raise any event.

Refer to this document for further information on Payables Periods:
https://docs.oracle.com/cd/A60725_05/html/comnls/us/ap/ctlperst.htm

Creating Custom Integrations

In Task Manager, you can create and manage custom Process Automation or Event Monitoring integrations with external applications. An EPM Adapter enables you to create connections and integration flows in Integration Cloud Service using Oracle EPM Cloud and other cloud and on-premises applications.

The following diagram shows the user and system flow for creating custom integrations:



See these topics:

- [Creating Custom Process Automation Integrations](#)
- [Creating Custom Event Monitoring Integrations](#)

Creating End User Integration

When you create Integrations, you select End-User as the Execution type. Users can then create task types based on the defined Integrations, or validate the Integrations.

To create an Integration:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **New**.

See also, [Setting Integration Properties](#) and [Setting Integration Parameters](#).

Creating Custom Process Automation Integrations

In Task Manager, you can create custom process automation integrations with external applications. In a Process Automation integration, a task is automatically executed in an external application when its start date and time are reached, and when any predecessor tasks are completed, for example, an overnight feed from a General Ledger.

When you create a Process Automation task, if you have set up email notifications, the task Owner automatically receives an email notification when the task starts or is completed. The Assignee that is specified when you set up a workflow receive an action notification when there is a change in the task status and an action needs to be performed, such as an approval, and the Owner receives a notification when the approval is completed.

Make sure you have the prerequisites and follow these steps to set up an integration between Task Manager and an external application.

For an overview of the custom integrations flow, see [Creating Custom Integrations](#).

Prerequisites

To integrate Task Manager with an external application, you need:

- A subscription to Oracle Integration Cloud Service, to integrate with on-premises and non-EPM Cloud services.

 **Note:**

You need one Integration Cloud instance per Oracle EPM cloud instance.

- The external application set up.
1. Subscribe to **Oracle Integration Cloud/Oracle Autonomous Integration Cloud**. See [Integration Cloud Service Documentation](#) for detailed information.
 2. Install Integration Cloud Agent in your application environment to communicate with your Oracle EPM cloud instance. For details on setting up Integration Cloud Agent, see [Managing Agent Groups](#).

 **Note:**

If the on-premises application services are deployed in an environment set up in a demilitarized zone (DMZ) configuration so that these services are publicly accessible through the Internet, you do not need to install Integration Cloud Agent.

Creating a Connection in Task Manager

1. On the Home page, click **Application** and then click **Task Manager**.
2. Click the **Integrations** tab on the left, and then click **Manage Connections**.
3. Click **New**.
4. For **Connection** enter a name for the connection.
5. Select **Enabled** to enable the connection.

6. Select **Cloud** if the external application is a Cloud service.
7. Click **OK** to save the connection.

Setting Up the Integration in Task Manager

1. On the Home page, click **Applications**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left, and then click **New**.
3. On the **Properties** tab, specify the required information:
 - a. For **Name**, enter a name for the Integration.
 - b. For **Code**, enter an Integration Code for the integration task.
The code is used to execute the Integration and to map updates to an Integration from a file import.
 - c. **Optional:** In **Description**, enter a description for the integration task.
 - d. For **Connection**, select an application to which the task belongs.
You can maintain the list of applications from the Manage Connections icon in the Manage Connections dialog box.
 - e. For **Execution Type**, select **Process Automation**.
4. On the **Parameters** tab, click **New** and then specify the required information:
 - a. For **Name**, enter a name for the parameter.
 - b. For **Parameter Code**, enter a parameter code.
 - c. **Optional:** Enter a parameter **Tooltip**.
 - d. From the **Parameter Type** list, select a type, and enter additional information for the parameter:
 - **Checkbox:** Boolean value
 - **Date:** Date value
 - **Integer:** Numeric value in whole numbers
 - **Number:** Numeric value in whole numbers or fractions
 - **Options Group:** Check box for a predefined set of values
 - **Static List:** Predefined set of text values
 - **Task Information:** Task information, for example, Assignee, duration, start and end dates
 - **Text:** Free-form text value.
 - **EPM Artifact:** Name of the artifact, such as the form or report.
 - e. If the parameter requires a value, select **Required**.
 - f. Click **OK** to save the parameter.
 - g. Click **Save and Close** to save the Integration.

Creating a Task Type for the Integration

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Click **New**.

4. On the **Properties** tab, specify a **Task Type Name** and **Task Type ID**.
5. For **Integration**, click **Search**, select the Integration, and then click **OK**.
6. On the **Parameters** tab, set the Task Type parameters.

Setting Up the Integration Cloud Connection in Task Manager

Task Manager uses Oracle Integration Cloud for all the integrations to external applications. You can setup a connection to Oracle Integration Cloud in Task Manager using Basic or OAuth 2.0 authentication.

Note:

- For Oracle Integration Cloud Generation 2, both Basic Auth and OAuth 2.0 is supported.
- For Oracle Integration Cloud Generation 3, only OAuth 2.0 is supported.
- Basic Auth user must have the Service Administrator role for Oracle Integration Cloud.
- For OAuth 2.0, only client credentials are supported. OAuth 2.0 client application must have Service Administrator role for Integration Cloud and allowed scope should be all.

Before setting up the OAuth 2.0 connection, make sure you've the client credentials such as access token URL, client ID, client secret, and scope. For setting up the OAuth client application, see [OAuth Authentication in Oracle Integration](#) in Oracle Integration Cloud Generation 3 documentation.

To setup the Integration Cloud connection in Task Manager:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **Manage Connections**, and then from **Actions**, select **Integration Cloud Connection**.
4. Select one of the following authentication mechanisms:
 - **Basic Auth:** Specify the Integration Cloud URL, service administrator user ID, and password.
 - **OAuth 2.0:** Provide the Integration Cloud URL, access token URL, client ID, client secret, and scope.

Note:

Enter the URL: `https://<SERVICE_NAME>-<TENANT_NAME>.integration.ocp.oraclecloud.com`

5. Click **Validate**. After validation is successful, click **Save**. This saves the server and credentials of the connection.

Creating a Connection and Integration in Integration Cloud

1. Log in to Integration Cloud.
2. Create a connection using Oracle Enterprise Performance Management Cloud adapter to your EPM server. Refer to this link for more details: [Create a Connection to Oracle Enterprise Performance Management Cloud](#).
3. Create one or more connections to the other application as needed.
4. Create Process Automation Integration using the connections created and activate it. Refer to this example: [Using the Oracle Enterprise Performance Management Cloud Adapter with Oracle Integration](#).

Completing the Integration Setup in Task Manager

Use these steps to complete the Integration setup in Task Manager.

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left and verify that the new Integration is displayed on the Integrations list.
3. In Task Manager, select **Schedules**, and create a new Schedule in Pending state. See [Manually Creating Schedules](#).
4. Create the process automation task and add it to the schedule. See [Creating Tasks](#).
5. From **Schedules**, select and open the schedule.

Creating Custom Event Monitoring Integrations

In Task Manager, you can create an Event Monitoring integration for an external application. The Event Monitoring integration is triggered when an external event occurs in another Cloud service or on-premises application. An example of an Event Monitoring integration is a trigger from Oracle E-Business Suite - General Ledger when a period, for example, January 2018, is closed.

Make sure you have the prerequisites and follow these steps to set up an integration between Task Manager and an external application.

For an overview of the custom integrations flow, see [Creating Custom Integrations](#).

Prerequisites

Note:

Event monitoring can also be triggered through any integration tool capable of invoking REST APIs. In that case you do not need the below prerequisites.

To integrate Task Manager with an external application, you need:

- A subscription to Oracle Integration Cloud Service, to integrate with on-premises and non-EPM Cloud services.

 **Note:**

You need one Integration Cloud instance per Oracle EPM cloud instance.

- The external application set up.
- 1. Subscribe to Oracle Integration Cloud / Oracle Autonomous Integration Cloud. See [Integration Cloud Service Documentation](#) for detailed information.
- 2. Install Integration Cloud Agent in your application environment to communicate with your Oracle EPM cloud instance. For details on setting up Integration Cloud Agent, see [Managing Agent Groups](#).

 **Note:**

If the on-premises application services are deployed in an environment set up in a demilitarized zone (DMZ) configuration so that these services are publicly accessible through the Internet, you do not need to install Integration Cloud Agent.

Setting Up the Integration in Task Manager

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left, and then click **New**.
3. On the **Properties** tab, specify the required information:
4.
 - a. For **Name**, enter a name for the Integration.
 - b. For **Code**, enter an Integration Code for the integration task.
The code is used to execute the Integration and to map updates to an Integration from a file import.
 - c. **Optional:** In **Description**, enter a description for the integration task.
 - d. For **Connection**, select an application to which the task belongs.
You can maintain the list of applications from the Manage Connections icon in the Manage Connections dialog box.
 - e. For **Execution Type**, select **Event Monitoring**.
 - f. For **Event Name**, enter a name for the event.
5. On the **Parameters** tab, click **New** and specify the required information:
 - a. For **Name**, enter a name for the parameter.
 - b. For **Parameter Code**, enter a parameter code.
 - c. **Optional:** Enter a parameter tooltip.
 - d. From the **Parameter Type** list, select a type, and enter additional information for the parameter:
 - **Checkbox:** Boolean value
 - **Date:** Date value
 - **Integer:** Numeric value in whole numbers

- **Number:** Numeric value in whole numbers or fractions
 - **Options Group:** Check box for a predefined set of values
 - **Static List:** Predefined set of text values
 - **Task Information:** Task information, for example, Assignee, duration, start and end dates
 - **Text:** Free-form text value
 - **EPM Artifact:** Name of the artifact, such as the form or report
- e. If the parameter requires a value, select **Required**.
 - f. Click **OK** to save the parameter.
 - g. Click **Save and Close** to save the Integration.

Creating a Task Type for the Integration

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Task Types** tab on the left.
3. Click **New**.
4. On the **Properties** tab, specify a **Task Type Name** and **Task Type ID**.
5. For **Integration**, click **Search**, select the Integration, and then click **OK**.
6. On the **Parameters** tab, set the Task Type parameters.

Setting Up the Integration Cloud Connection in Task Manager

Task Manager uses Oracle Integration Cloud for all the integrations to external applications. You can setup a connection to Oracle Integration Cloud in Task Manager using Basic or OAuth 2.0 authentication.

Note:

- For Oracle Integration Cloud Generation 2, both Basic Auth and OAuth 2.0 is supported.
- For Oracle Integration Cloud Generation 3, only OAuth 2.0 is supported.
- Basic Auth user must have the Service Administrator role for Oracle Integration Cloud.
- For OAuth 2.0, only client credentials are supported. OAuth 2.0 client application should have the Service Administrator role for Integration Cloud and allowed scope should be all.

Before setting up the OAuth 2.0 connection, make sure you've the client credentials such as access token URL, client ID, client secret, and scope. For setting up the OAuth client application, see [OAuth Authentication in Oracle Integration](#) in Oracle Integration Cloud Generation 3 documentation.

To setup the Integration Cloud connection in Task Manager:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.

3. Click **Manage Connections**, and then from **Actions**, select **Integration Cloud Connection**.
4. Select one of the following authentication mechanisms:
 - **Basic Auth**: Specify the Integration Cloud URL, service administrator user ID, and password.
 - **OAuth 2.0**: Provide the Integration Cloud URL, access token URL, client ID, client secret, and scope.

 **Note:**

Enter the URL: `https://<SERVICE_NAME>-<TENANT_NAME>.integration.ocp.oraclecloud.com`

5. Click **Validate**. After validation is successful, click **Save**. This saves the server and credentials of the connection.

Setting Up the Integration in Integration Cloud

 **Note:**

If you are not planning to use Integration Cloud, skip this step.

To set up the integration in Integration Cloud:

1. Log in to Integration Cloud.
2. Create a connection using Oracle Enterprise Performance Management Cloud adapter to your EPM service. Refer to this link for more details: [Create a Connection to Oracle Enterprise Performance Management Cloud](#).
3. Create one or more connections to the other application as needed.
4. Create Event Monitoring Integration using the connections created and activate. Refer to this example: [Using the Oracle Enterprise Performance Management Cloud Adapter with Oracle Integration](#).

Setting Up the Integration without Integration Cloud

 **Note:**

If you are planning to use Integration Cloud, skip this step.

Configure the integration tool which you are planning to use.

1. Review the REST API, [Update Task Status for Event Monitoring](#) in *REST API for Oracle Enterprise Performance Management Cloud*.
2. Configure the integration tool to call the REST API to close the Event Monitoring task passing the parameters for the event.

For more information, see [Update Task Status for Event Monitoring](#) in *REST API for Oracle Enterprise Performance Management Cloud*.

Completing the Integration Setup in Task Manager

Use these steps to complete the Integration setup in Task Manager.

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left, and verify that the new Integration is displayed.
3. In Task Manager, click **Schedules**, and create a new Schedule in Pending state. See [Manually Creating Schedules](#).
4. Create the event monitoring task and add it to the schedule. See [Creating Tasks](#).
5. From **Schedules**, select and open the schedule.
6. Trigger the action that generates the event in the external application (for example, EBS). If you are not using Integration Cloud but other integration tool, invoke the REST API from the integration tool.

 **Note:**

Pass the parameters as expected by the integration type, event, parameters, otherwise the task will not be considered if they do not match.

7. Wait for the task to be completed.
8. **Optional:** To monitor the status of the Integration in Integration Cloud Services, log in to Integration Cloud and navigate to **Monitoring**.

Working with Integrations

Related Topics:

- [Creating Integrations](#)
- [Viewing Integrations](#)
- [Editing Integrations](#)
- [Searching for Integrations](#)
- [Validating Integrations](#)
- [Deleting Integrations](#)

Creating Integrations

When you create Integrations, you select End-User as the Execution type. Users can then create task types based on the defined Integrations, or validate the Integrations.

To create an Integration:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **New**.

Add information to the following sections:

- [Setting Integration Properties](#)
- [Setting Integration Parameters](#)

Setting Integration Properties

You can set properties for the Integration such as the associated application and End User tasks.

For an End User task, you can select the single sign-on (SSO) Parameter option to enable users to access an external web application without being prompted for authentication. You can use an SSO parameter for an external application if that application is integrated with the Oracle EPM System SSO framework.

To set Integration properties:

1. Select the Integration to edit.
2. In **Properties**, for **Name**, enter a name for the Integration. You can enter a maximum of 80 characters.
3. Enter a **Code**, for example, `HFM_CONS` for the Hyperion Financial Management Consolidate integration task. You can enter a maximum of 90 characters.

The code is used to execute the Integration and to map updates to an Integration.

4. **Optional:** In **Description**, enter a description for the integration task. You can enter a maximum of 255 characters.
5. In **Connection**, select an application to which the task belongs.

 **Note:**

You can maintain the list of applications from the Manage Connections icon in the Manage Connections dialog box.

6. For **Execution Type**, select **End User** and select options:
 - **End User Endpoint:** To enter parameters for an **End User** task, the **End User Endpoint** should contain these parameters in these formats:
*\$Parameter Type Code\$, for example \$COLORS\$. The system replaces the parameter tokens in the **End User Endpoint** with the information you specified for the task parameters.*
 - **Optional: Show in-line:** Select whether to display the URL in line within the Task Actions dialog.
 - **Optional: SSO Parameter:** Specify the name of the SSO parameter for your application to include when executing the End User task URL to the external application. If you do not specify an SSO parameter, the system uses the End User URL.
7. **Optional:** Click **Parameters**.

Setting Integration Parameters

Task Manager Integration parameters enable the application to pass information to the end point to control how the end point should perform its action. For example, when you run a consolidation, your program can pass which application to run the consolidation against, and the dimension selections for the consolidation. You set the parameter values defined in the Integrations in the task or Task Type using the integration.

Each parameter definition requires a name, description, unique code, type, and whether a value is required. The parameter code is the token that replaces the parameter in the execution URL for user tasks, or the parameter name that is passed to the execution web service for system-automated integrations. Required values must have a value for all tasks in a schedule before the schedule can be set to Open.

The Parameter Type controls the parameter value and how the user enters the value in the task field. Supported parameter types:

To set Integration parameters:

1. In the **New Integration** dialog box, click **Parameters**.
2. Click **New**.
3. Enter a **Name** for the parameter.
4. Enter a **Parameter Code**.
5. Enter a parameter **Tooltip**.
6. From the **Parameter Type** list, select a type, and enter additional information for the parameter:
 - **Checkbox**: Boolean value
 - **Date**: Date value
 - **Integer**: Numeric value in whole numbers
 - **Number**: Numeric value in whole numbers or fractions
 - **Options Group**: Check box for a predefined set of values
 - **Static List**: Predefined set of text values
 - **Task Information**: Task information, for example, Assignee, duration, start and end dates
 - **Text**: Free-form text value.
 - **EPM Artifact**: Name of the artifact, such as the form or report
7. If the parameter requires a value, select **Required**.
8. Click **OK** to save the parameter.
9. Click **Save and Close** to save the Integration.

Viewing Integrations

You can view the properties and parameters of imported Integrations. You can specify which columns to display, or show all. You can also reorder columns, sort columns by ascending or descending order, or change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Select **View**, then **Columns**, and then select an option:
 - To display all columns, select **Show All**.
 - To display specific columns, select or deselect the column names.

To reorder columns:

1. Click **Integrations**.
2. Select **View**, and then **Reorder Columns**.
3. Select columns and use the Up and Down arrows to change the order.

To sort columns:

1. Click **Integrations**.
2. Hover over a column header until the Sort icons display, then click **Sort Ascending** or **Sort Descending**.

To change column widths:

1. Hover over the column header dividers until the arrows display.
2. Drag the columns to the desired width.

Editing Integrations

You can't edit the pre-built Integrations provided by default by the system. You can only edit custom-built integrations that you created.

For an End User type, you can edit the endpoint, change the point of view, or change the list of values.

To edit an Integration:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Select an Integration, and click **Edit**.
4. Edit the Integration.
5. Click **Save and Close**.

Searching for Integrations

You can use the Search box on the Integrations page to find Integrations. You can enter full or partial names on which to search.

To search for Integrations:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. In the **Search** box, enter full or partial search criteria for the Integration.
4. Press **Enter**.

To reset the list to display all Integrations, clear the **Search** box and then press **Enter**.

Validating Integrations

You can test and validate Task Manager Integration definitions through a test schedule and adding a task to the schedule.

To validate an Integration:

1. In Task Manager, click **Schedules**, then click **New** to create a Schedule in Pending state. See [Manually Creating Schedules](#).

2. Add a task based on the integration to be validated to the schedule. See [Creating Tasks](#).
3. From **Schedules**, select and open the schedule.
4. From **Tasks**, click **Schedule**. Select the schedule and view the Task.
5. For Event Monitoring Task, trigger the action that generates the event in the external application (for example, EBS). If you are not using Integration Cloud but other integration tool, invoke the REST API from the integration tool.

Deleting Integrations

You can delete Integrations that you no longer need. However, you can't delete pre-built Integrations provided by default and you can't delete an Integration while it is associated with a Task Type.

To delete an Integration:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Select an Integration to delete.
4. Click **Delete**.
5. At the confirmation prompt, click **Yes**.

Managing Connections

Integrations are assigned connections for the external products to which they link. From the Manage Connections module, you can maintain a list of connections associated with the Integrations. You can search on and sort the list by connection.

- [Adding Connections](#)
- [Editing Connections](#)
- [Deleting Connections](#)

Adding Connections

You can add connections to associate with an Integration Type. You can also specify the security policy to use for an Integration Type.

In addition, you can specify application-level tokens and values for all Integration Types in an application. When you specify an application-level token in an end-user URL or web service WSDL, the system replaces the token with the value defined for that token in the application. For example, you can specify tokens with values for server and port, and the system automatically applies those values to the Integration Types in the application.

To add a connection:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **Manage Connections**.
4. Click **New**.
5. Complete the **New Integration Properties** and **Parameters**, then click **Save and Close**.

6. **Optional:** To add an application-level token, click **Manage Connections**. Click **New** or select a Connection and click **Edit**. In the **Application Tokens** table, click **Add**. Enter a **Token Name** and optionally a **Token Value**, and then click **OK**.

**Tip:**

To remove a token, click **Delete**.

Editing Connections

You can edit the name of a connection, the security information, and application-level tokens.

**Note:**

You cannot add or modify application tokens for seeded applications. You can only edit the token values.

You also use the Edit Connections dialog to enable pre-built Integrations. After you enable the Integration and fill in the parameters, you can then create tasks using Task Types for the enabled Integrations.

To edit a connection:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.
3. Click **Manage Connections**.
4. Select a connection, and click **Edit**.
5. To enable a pre-built Integration, select the connection, select **Enabled**, and fill in the parameters.

You can enable or disable a connection at any time.

6. Edit the settings or tokens as needed, and click **OK**.

Deleting Connections

You can delete connections that you no longer need for Integrations. You cannot delete a connection while it is associated with an Integration Type. You must modify the properties for each Integration Type that references the connection before you can delete the connection.

**Note:**

You cannot delete seeded Integration connections.

To delete a connection:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Integrations** tab on the left.

3. Click **Manage Connections**.
4. Select a connection, and click **Delete**.

Managing Alert Types for Task Manager



Note:

The Alert Types feature is only available to administrators.

When performing a business process, users might encounter roadblocks such as a hardware failure, software issues, system failure, and so on. They can create an alert identifying the problem, and attach it to the task.

For example, a user is running a business process and can't log on to the system. The user selects an alert type, which directs the alert to the proper resources to resolve their issue.

See these topics:

- [Creating Alert Types](#)
- [Editing Alert Types](#)
- [Viewing Alert Types](#)
- [Searching for Alert Types](#)
- [Deleting Alert Types](#)

Creating Alert Types

When users encounter roadblocks during a business process, they can create alerts identifying a problem.

You can define Alert Types for stored procedures which capture critical information and assign key personnel for issue resolution. Using Alert Types, you can analyze the types of issues that users encounter during the business cycle and make changes to prevent them in future cycles.

To create an alert type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Click **New**.
4. Enter the necessary information on the Alert Type tabs:
 - [Setting Alert Type Properties](#)
 - [Specifying Alert Type Instructions](#)
 - [Selecting the Alert Type Workflow](#)
 - [Assigning Alert Type Viewers](#)
 - [Adding Questions for Alert Types](#)
 - [Applying Alert Type Attributes](#)
 - [Viewing Alert Type History](#)

Setting Alert Type Properties

The Properties tab enables you to specify the alert type name and description, and associate it with a Task Manager object, such as a task or schedule. An individual alert can be associated with multiple objects.

You can place restrictions on the relationship between the alert and its associated object. Not all restrictions can be applied to all objects.

Table 12-24 Alert Restrictions

Restriction	Description	Example
None	No restrictions on the status of the object and the status of the alert	A user raises a 'slow performance' alert while working on a reporting task. While this affects how long the task takes, it does not prevent the task from completing normally. Even if the task completes, the user still wants the alert open until the performance issue is resolved.
Prevent Workflow	Workflow on the object cannot proceed forward (no submits, approvals, and so on) until the alert is closed. This does not prevent claims or rejections (workflow moving backward). It also does not prevent an Administrator or Owner from forcing the workflow forward.	A user raises an alert that the reporting system is down. This will prevent any work on reporting tasks until the alert is resolved. Preventing workflow includes preventing status changes from Pending to Open and Open to Closed.
Prevent Close	The object cannot be moved into a closed state until the alert is closed. However, intermediate workflow may proceed. This does not prevent an Administrator or Owner from closing or 'force closing'.	A user raises an alert that some comparison data is missing for a reporting task. While this does not prevent the report from being created and going through initial approvals, the report should not be fully signed off until it can be compared to the missing data.

An object may have multiple alerts with different restrictions. If this is the case, the following rules will apply in order of precedent:

1. If any open alert associated with the object has a Prevent Workflow restriction, Prevent Workflow will stop the object's (for example, a Task) workflow until the alert is closed.
2. If any open alert associated with the object has a Prevent Close restriction, then the object cannot be closed until the alert(s) is closed.

In addition, an alert may be associated with multiple objects. If it has more than one Prevent Close restriction to different objects, the alert will only be closed when the last object is closed.

To set alert type properties:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Click **New** to open **New Alert Type**, which will default to the **Properties** tab.

4. For **Name**, enter an alert type name. You can enter a maximum of 80 characters.
5. Enter an **Alert Type ID**. You can enter a maximum of 80 characters.
An Alert Type ID is required, and must be unique.
6. **Optional:** For **Description**, enter an alert type description. You can enter a maximum of 255 characters.
7. **Optional:** From the **Associated With** drop-down list, select an object, such as a task, with which to associate the alert.
8. **Optional:** For **Restrictions**, enter any restrictions for the alert. For example, if you select **Prevent Close** for an alert on a task, the user can't complete the close task until the alert is complete.
If you select **All Types** for **Associated With**, no restrictions are available.
9. Select from the following values for both **Period Selection** and **Year Selection**:
 - **Required** – The user is required to associate the Alert with a Year or Period.
 - **Visible** – The user may associate the Alert with a Year or Period.
 - **Hidden** – The property is hidden and the Alert will not be associated with a Year or Period.These options indicate how Periods and Years are associated with an Alert.
10. Select **Allow Remove Associations** option to remove an existing association from an Alert. If you unselect this option, you will not be able to remove existing associated artifacts from the Alert.
11. Click **Enabled** to enable the alert type.
Only alert types that are Enabled are displayed in the list of available Alert Types and available for selection when creating new alerts.
12. Click an Alert Type tab and continue entering information.
When you are done entering the Alert Type information, click **Save and Close**.

 **Note:**

You cannot create an alert on an existing alert.

- [Specifying Alert Type Instructions](#)
- [Selecting the Alert Type Workflow](#)
- [Assigning Alert Type Viewers](#)
- [Adding Questions for Alert Types](#)
- [Applying Alert Type Attributes](#)

Specifying Alert Type Instructions

You can specify instructions in an alert type to help users understand what they need to do for the alert. You can add additional references from File and URL attachments.

To specify instructions for an alert type:

1. On the Home page, click **Application**, and then click **Task Manager**.

2. Click the **Alert Types** tab on the left.
3. From the New or Edit dialog, select the **Instructions** tab.
4. In **Instructions**, enter instruction text for the alert type.

To add a reference:

1. In the **References** section, click **Attach a file** or **Attach a link**.
 - **Attach a file**
Click **Choose File** to select and attach the file. For **Name**, enter a name or use the filename. Click **OK**.
 - **Attach a link**
Enter the **URL**, then enter a **Name** for the URL; for example: <https://www.oracle.com>, Oracle. Click **OK**.
2. Click an Alert Type tab and continue entering information.
When you are done entering the alert type information, click **Save and Close**.
 - [Selecting the Alert Type Workflow](#)
 - [Assigning Alert Type Viewers](#)
 - [Adding Questions for Alert Types](#)
 - [Applying Alert Type Attributes](#)

Selecting the Alert Type Workflow

The Workflow section contains the Assignee and Approver assignments. You can also select Backup users.

To select the Alert Type workflow:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. From the New or Edit dialog, click the **Workflow** tab.
4. For **Assignee**, click the Member Selector and select an assignee.

The assignee is the user or group assigned to work on the alert when one is created of this type. If you do not specify an assignee, the user who creates the alert will need to fill one in.

5. **Optional: For Backup User**, select a backup user for the assignee:
 - a. On the Home page, select **Tools**, then **Access Control**, and then **Task Manager Users**.
 - b. Edit the assignee ID and change the **Status** field to **Unavailable**.
 - c. Then from the Alert Types **Workflow** tab, you can select a backup user.

The Backup User is the backup individual assigned to work on the alert if the main assignee is out of office. You must have previously assigned an assignee and a backup assignee.

6. Click **Add (+)** to add an Approver, and enter this information for the Approver:
 - **User Name**
 - **Backup User:** You can specify a default backup Approver user for the alert if the main Approver is out of the office. This is not required.

Level displays the approvers in the order they were entered. You can reorder the Approver list by selecting an approver and clicking the arrow buttons to move them up or down in the list.

You can add one or more levels of default Approver users or groups for the alert when one is created of this type. These are not required. If you do not specify Approvers, the user who creates the alert has the option to add them.

7. Click an Alert Type tab and continue entering information.

When you are done entering the Alert Type information, click **Save and Close**.

- [Assigning Alert Type Viewers](#)
- [Adding Questions for Alert Types](#)
- [Applying Alert Type Attributes](#)

Assigning Alert Type Viewers

The Viewers tab enables you to assign Viewer rights for alert types. Viewers have read-only access.

To assign Viewer rights:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Click **New** or **Edit** and click on the **Viewers** tab.
4. Click **Add** and select the name of the user or group that will have View access to the alert.

The system opens the Member Selector. It is editable for external Viewers.

5. **Optional:** Click **Add External User** to add a user outside the system who needs to be notified about the alert.

The external user will not have any visibility to the alert, they will only receive notifications. No service access is granted.

6. Specify an **Email Address** for the viewer.

The email address is editable for external Viewers. If there are duplicate email addresses in the list, you cannot save changes to the alert type.

7. Select a **Notification Priority** to indicate at what alert priority the users will be alerted via email.

Notifications will be sent for the priority level or higher. So if set to High, notifications will be sent only when the alert is set to High. If set to Low, then they will be notified for all priority types (Low, Medium, High). If this is blank (default), no notification will be sent.

8. Click an Alert Type tab and continue entering information.

When you are done entering the Alert Type information, click **Save and Close**.

- [Adding Questions for Alert Types](#)
- [Applying Alert Type Attributes](#)

Adding Questions for Alert Types

When you create an Alert Type, you may want a user to answer questions about their actions before they indicate the Alert Type is complete. For example, you may ask if a certain process was followed when completing that task. Questions can be set to the Administrator, Assignee,

Approver, Owner, or Viewer roles. This allows key details to be gathered from the user experiencing the issue.

You can specify various types of questions, such as Text, Number, or True/False, and indicate whether they are required. If a question is required, the user must respond or they cannot submit the task for approval. You can also order the questions by using the Move Up and Move Down buttons.

To add a question:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. From the **New** or **Edit** dialog, select the **Questions** tab.
4. Click **New**.
5. For **Question**, enter text for the question, with a maximum of 4000 characters.
6. From the **Type** list, select a question type:
 - **Date**
 - **Date/Time**
 - **Integer**
 - **List**

Enter a list of valid responses to the question.
 - **Multi-Line Text**

The maximum length should be less than 4,000 characters.

Select Multi-Line Text, and then enter the **Number of Lines**, from 3 to 50 lines. Multi-Line Text determines how many lines of text are visible without scrolling, on the Actions dialog boxes.
 - **Number**

If you select **Number**, select number formatting options:

 - For **Decimal Places**, enter a value for the number of decimal places to display.
 - Select the **Thousands Separator** option if you want numbers to display a thousands separator (for example, 1,000.00)
 - From the **Currency Symbol** list, select a currency symbol; for example, \$ (United States of America Dollar).
 - From the **Negative Number** list, select how to display negative numbers; for example, (123).
 - From the **Scale** list, select a scale value for numbers; for example, 1000.
 - **Text**
 - **True/False**
 - **User**
 - **Yes/No**
7. Assign the **Role** (Owner, Assignee, Approver, Viewer) of the user who should answer the question.
8. If the question is required, select **Required**.

Required indicates that the question must be answered by the user before they can proceed. Required questions can be set for Assignees, Approvers, and Owners. This is disabled for the System Administrator and Viewer role.

9. Click **OK**.
10. **Optional:** To change the order of questions, select a question, then click **Move To Top**, **Move Up**, **Move Down**, or **Move To Bottom**.
11. **Optional:** To edit a question, select the question and click **Edit**. To remove a question, select the question and click **Delete**.
12. Click an Alert Type tab and continue entering information.

When you are done entering the Alert Type information, click **Save and Close**.

- [Applying Alert Type Attributes](#)
- [Viewing Alert Type History](#)

Applying Alert Type Attributes

When you select an attribute, you can set a value for the attribute based on the attribute type. You can later filter by the attribute value.

For example, you may have a List attribute named Sales Region with the values of North, South, East, and West. The current alert type applies only to the West Sales Region, so you can add the Sales Region attribute and set it to "West".

To apply an attribute:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Click **New** or **Edit**, and select the **Attributes** tab.
4. Click **Add**.
5. From the **Attribute** list, select an attribute.
6. From **Value**, depending on the attribute, select a value for the attribute from a drop-down list, or enter a value.
7. **Optional:** To change access for the attribute, select a **Role** and **Access**.
8. Click **Save and Close**.
9. To edit other alert type information, see these topics:
 - [Setting Alert Type Properties](#)
 - [Specifying Alert Type Instructions](#)
 - [Selecting the Alert Type Workflow](#)
 - [Assigning Alert Type Viewers](#)
 - [Adding Questions for Alert Types](#)

Viewing Alert Type History

The system maintains a history of alert type actions. The History tab displays the components that were created or updated, the modification type, the old and new values, the user who made the modification, and the change date. The information on the History tab is read-only.

To view alert type history:

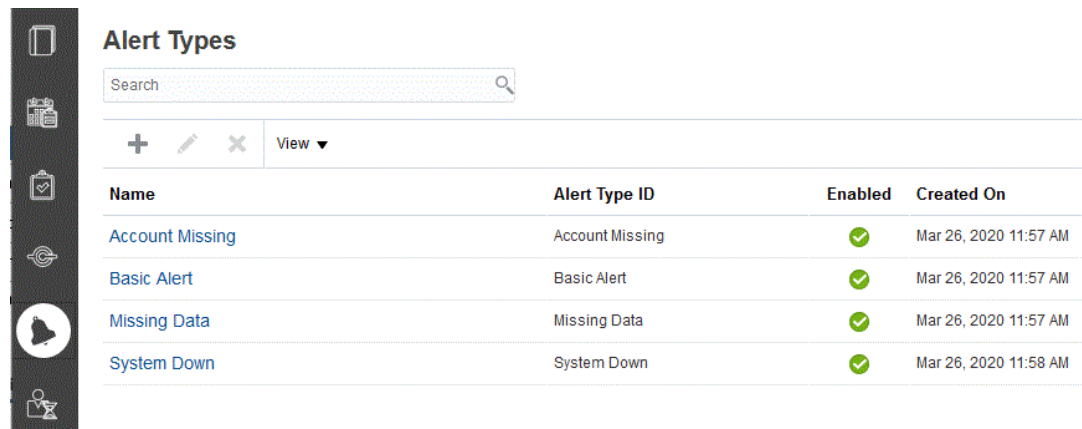
1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Edit an alert type and select the **History** tab.
4. View the history, then click **Save and Close**.

Viewing Alert Types

In Alert Types, you can specify which columns to display for the list of alert types, or show all. You can also reorder columns, sort columns by ascending or descending order, or change the column widths.

To display columns:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Do one or more of the following tasks:
 - To display all columns, select **View**, then **Columns**, and then select **Show All**.
 - To display specific columns, select **View**, then **Columns**, and select or deselect the column names.
 - To reorder columns, select **View**, and then **Reorder Columns**, select columns and use the Up or Down arrows or drag them to change the order.
 - To sort columns, hover over a column header until the Sort icons are displayed, and then click **Sort Ascending** or **Sort Descending**.
 - To change column widths, hover over the column header dividers until the arrows display, and drag the columns to the desired width.



Name	Alert Type ID	Enabled	Created On
Account Missing	Account Missing	✓	Mar 26, 2020 11:57 AM
Basic Alert	Basic Alert	✓	Mar 26, 2020 11:57 AM
Missing Data	Missing Data	✓	Mar 26, 2020 11:57 AM
System Down	System Down	✓	Mar 26, 2020 11:58 AM

Column Definitions for Alerts

This section provides the definitions for the Alerts columns.

Table 12-25 Column Definitions - Alerts

Column Name	Description
Alerts (Count)	Total count of alerts

Table 12-25 (Cont.) Column Definitions - Alerts

Column Name	Description
Alerts Open (Count)	Total count of open alerts
Alert Type	Type of the alert. Based on the type, you can analyze the types of issues that users encounter during the business cycle and make changes to prevent them in future cycles
Approver 1-10	Approver level
Approver 1-10 (Backup)	Backup approver for the alert
Approver 1-10 (Primary)	Primary approver for the alert
Approver 1-10 End Date (Actual)	Actual end date for each approver level
Approver 1-10 Rejections (Count)	Count of alerts rejected by approvers
Assignee	Assigned user for the alert
Assignee (Backup)	Backup user assigned for the alert
Assignee (Primary)	Primary user assigned for the alert
Assignee End Date (Actual)	Actual end date for the assigned user
Associated Object Type	Type of object associated with the alert
Associated Objects (Count)	Total count of the associated objects for the alert
Closed Date	Date when the alert was closed
Comments (Count)	Total count of comments for the alert
Created By	Name of the user who created the alert
Created On	Date and time when the alert was created
Description	Description of the alert
Duration	Defined alert duration
Duration (Actual)	Actual alert duration
End Date	Effective end date for the alert
ID	Unique identifier for the alert
Last Updated By	Name of the user who last updated the alert
Last Updated On	Date and time when the alert was last updated
Name	Name of the alert
Owner	Name of the alert owner, which must be a Service Administrator or Power User.
Owner End Date (Actual)	Actual end date for the alert owner
Period	Period for the alert
Priority	Priority assigned for the alert
Start Date	Effective start date for the alert
Status	Status of the alert
Status (Detailed)	Detailed status of the alert
Status (Icon)	Status of the alert indicated as icon
Year	Year when the alert was created

Editing Alert Types

You can edit the names and descriptions of alert types, and specify whether they are Enabled. When you enable an alert type, it is displayed in the list of available Alert Types.

Normally, items in a locked schedule cannot be edited or modified. However, alerts associated with a locked schedule can be updated, have their workflow progress and even be removed from the schedule or deleted.

To edit an alert type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Select the alert type and click **Edit**.
4. Edit the alert type.
5. Click **Save and Close**.

Searching for Alert Types


You can use the Search function in the Alert Types list to quickly find alert types. You can enter full or partial names on which to search. Using the filter bar, you can control the alert types that you see in the list. By default, all alert types are displayed.

To search for alert types:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. To search for an alert type, enter search criteria in the **Search** text box.
4. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals**, **Does Not Equal**, **Contains**, **Does Not Contain**, **Starts With**, and **Ends With**.

You can filter alert types using these categories: **Name**, **Alert Type ID**, **Enabled**, **Description**, **Created By**, **Created On**, **Last Updated By**, or **Last Updated On**.

Note:

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click **Clear All Filters** in the  icon.

Deleting Alert Types

You can delete alert types. When an alert type is deleted, the alert is not deleted; rather it loses its alert type assignment.

To delete an alert type:

1. On the Home page, click **Application**, and then click **Task Manager**.
2. Click the **Alert Types** tab on the left.
3. Select the alert type.
4. Click **Delete**, and then click **OK**.

Using Task Manager Reports

Related Topics


- [Generating Custom Reports for Task Manager](#)
- [Creating a Task Manager Query](#)
- [Creating a Template](#)
- [Setting Up a Report Group](#)
- [Creating a Report](#)
- [Searching and Filtering Queries, Report Groups, or Reports](#)
- [Generating the Report](#)
- [Understanding Reports Security](#)
- [Using Task Manager Report Binders](#)
- [Generating Report Binders](#)
- [Viewing Report Binders](#)

Generating Custom Reports for Task Manager

You can create reports for Task Manager . The reports can be generated in PDF, CSV, HTML, or XLSX format.



Note:

Task Manager provides sample reports to assist you in getting started. You can use them as templates and can duplicate them as needed, then make modifications or extend access to users. To duplicate a report, select the report, then select **Duplicate** from the ellipsis button  . You can then edit the newly created report.

You can also create custom reports. Building custom reports involves four steps and can only be performed by a Service Administrator:

- Create a Task Manager query from the **New** button of the **Queries** tab. See [Creating a Task Manager Query](#) .
- Create a template. See [Creating a Template](#).
- Set up a report group.
- Set up the report.

To build custom reports, you create a query whose definition can then be exported as an XML file. Import the XML file into Word and use it to create a template document, which must be in RTF format. Then you can set up a report group to group individual reports. Finally, generate the report, which uses both the query and the template you created and can be set with a default output of CSV, PDF, HTML, or XLSX.

After you have built a custom report, the Service Administrator or other users who have been granted access can generate the report. See [Generating the Report](#).

 **Note:**

If you are managing your migration from Oracle Classic environment to Oracle Cloud Infrastructure (OCI) and have any custom reports, you may have to update the custom report's query definitions in the Target Service. This is because the internal IDs for objects (for example, Tasks, Journals, Attributes, etc.) may change during the migration. However, in case of Oracle managed migration, there will not be any change in the internal object IDs, so changes to custom report definitions is not required.

Creating a Task Manager Query

Creating a query is the first step in creating a custom report.

To create queries:

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. On the **Queries** tab, click **New**.
4. On the **New Query** screen, enter a **Name** and an optional **Description**.
5. From **Type**, select an option:
 - **Parameter Query**: A Parameter Query type is used to present a list of options that you can specify for this parameter's value. Parameter Query allows you to present a list of options used when filling in a parameter's value for a Report Query, where the list of options is not a simple Attribute already defined, but is instead a complex query that you need to define.

This parameter query example provides a list of all Task Manager periods:

```
SELECT PERIOD_ID, PERIOD_NAME FROM FCC_PERIODSWHERE APP_ID=1
```

- **Report Query** : Select the records to be included in the report. You can apply a security filter, so users see only the data that they are authorized to see based on their roles and the reports to which they are assigned. To apply a Security Filter to a report query, add the following syntax to the end of the query WHERE CLAUSE statement.

```
$FCC_SECURITY_CLAUSE$
```

When using `$FCC_SECURITY_CLAUSE$` in the query, the `FCC_TASKS` must be aliased to `TaskEO`

Because many predefined queries included with Task Manager have the Security Filter applied, you can use them as examples when building your own.

For example, the following Report Query specifies scheduled tasks to display Task Code, Name, Assignee and Schedule for all High Priority tasks in the selected schedule.

```
SELECT TaskEO.TASK_CODEAS "$TASK_CODE$",
TaskEO.TASK_NAMEAS "$NAME" ,
((SELECT CASE WHEN FIRST_NAME IS NULL AND LAST_NAME IS NULL THEN
USER_LOGIN ELSE FIRST_NAME||' '||LAST_NAME END FROM FCM_USERS WHERE
USER_ID = (coalesce(AssigneeEO.ACTIVE_USER_ID, AssigneeEO.USER_ID))))AS
"$ASSIGNEE" ,
DeploymentEO.DEPLOYMENT_NAMEAS "$SCHEDULE$"
```

```

FROM FCC_TASKS TaskEO

LEFT OUTER JOIN FCC_ACCESS AssigneeEO ON (TaskEO.TASK_ID =
AssigneeEO.SOURCE_ID AND AssigneeEO.ACCESS_TYPE = "AS")

LEFT OUTER JOIN FCC_DEPLOYMENTS DeploymentEO ON (TaskEO.SOURCE_ID =
DeploymentEO.DEPLOYMENT_ID)

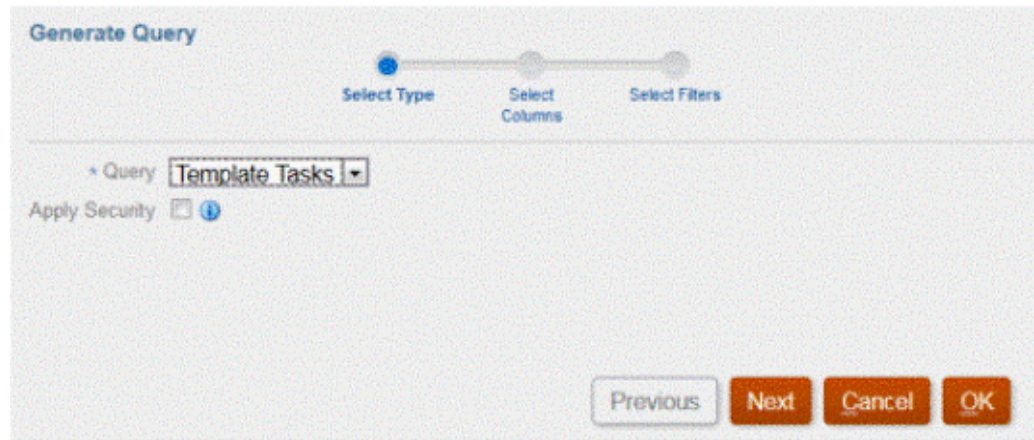
WHERE (TaskEO.SOURCE_TYPE = "DEPLOYMENT")

AND (((TaskEO.PRIORITY=3 )

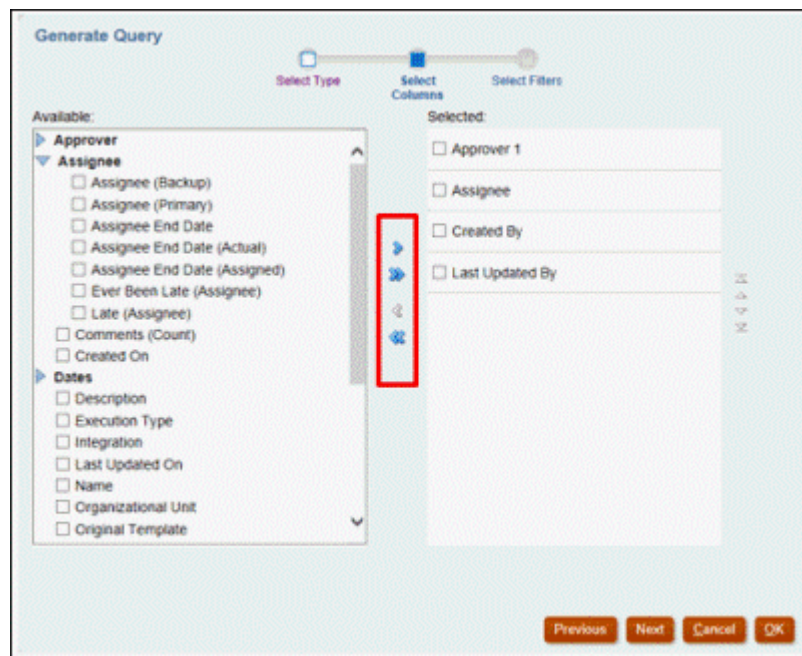
AND (TaskEO.SOURCE_ID=~SCHEDULE~ ))))

```

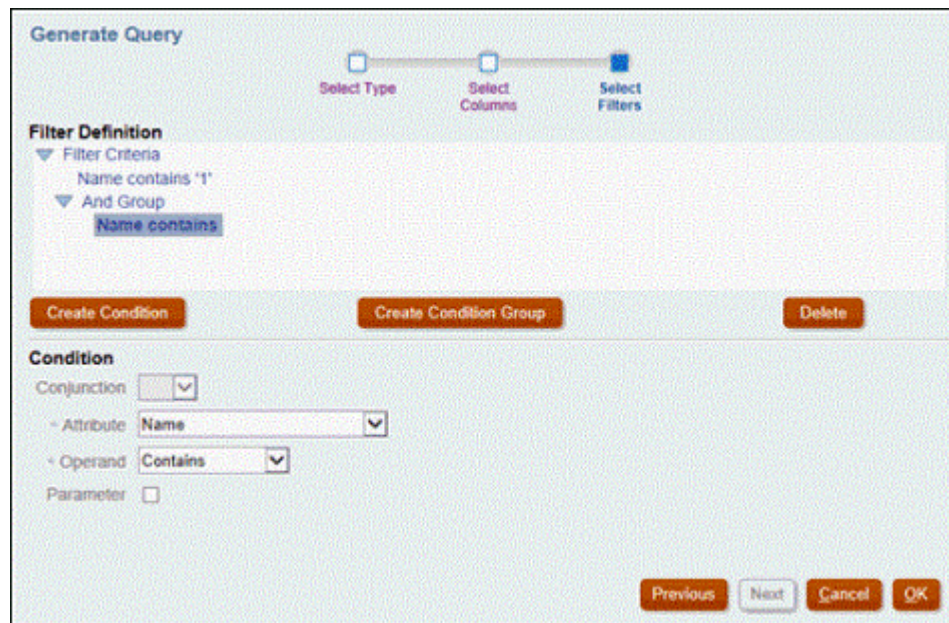
6. Click **Generate Query** to build the query from the New Query dialog. The dialog assists you in creating a query against the database by allowing you to select any existing attribute in the product to be queried and/or filtered against. The system then generates the SQL to match the specified attributes and filters, at which time you can modify and enhance it.
 - a. On the **Select Type** screen, select options:
 - From **Query**, select **Template Tasks** or **Schedule Tasks**.
 - **Optional:** Select the **Apply Security** checkbox to automatically apply the user security filter to the generated query. This applies the Security token to the query, to be filled in with the correct SQL when the report is generated.
 - b. Click **Next**.



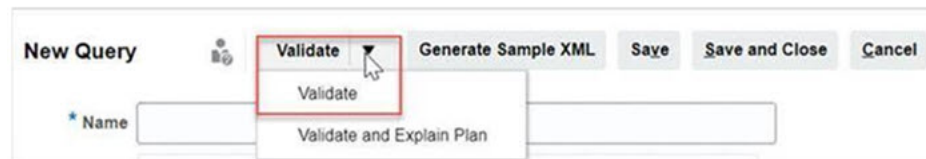
7. From **Select Columns**, select the columns to display in the query, and then click **Next**.



8. From **Select Filters**, click **Create Condition** or **Create Condition Group** and select the conditions to create the filters to create the query.



9. Click **OK**.
10. **Optional:** If you want to use the report in the future, click **Generate Sample XML**.
11. Click **Save**.
12. To test the query for errors:
 - Click **Validate** from the New Query dialog. You can also select **Validate** from the drop-down list.



The query displays in the Queries tab.

 **Note:**

You can easily delete a query, or duplicate a query using the Action menu.


- Click **Validate and Explain Plan** from the drop-down to validate the query and also generate the execution plan for this query. A .txt file that uses the same name as the query is generated. You can view or download the generated plan. Open this file to view the generated plan which contains the sequence of steps that is performed to run this query. If the performance of a query is suboptimal, you can use this plan to understand the cause of the problem and determine the best way to improve the query performance.

 **Note:**

By default generation of execution plans is available only for OCI (Gen 2) environments. To enable it for Classic environments, contact Oracle using a service request.

Modifying A Query

A system administrator can edit a Task Manager query .

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. Select the **Queries** tab if it's not already selected, and then **Edit** from  next to the query you are editing.

 **Note:**

If it is locked, ask the System Administrator to unlock.

4. Select Task Manager query.
5. In **Edit Query**, edit the information as needed.
6. After you are done with your changes, click **Save and Close**.

Creating a Template

Creating report templates is the second step in generating custom reports. Report templates are created in Microsoft Word with Oracle BI Publisher Desktop installed. Template creation also requires that you already generated the Sample XML during query creation.

To create a report template:

1. Open Microsoft Word with a new document.
2. Select the **BI Publisher** tab, then select the **Sample XML** folder above **Load Data**.
3. Locate the `SampleQuery.xml` that was generated when you created the query and click **Open**.
When the message displays, "*Data Loaded Successfully*", click **OK**.
4. Select **Insert**, and then **Table Wizard**.
5. Select **Table** and click **Next**.
6. Select the default data set and click **Next**.
7. Select the desired fields to show in the report and click **Next**.
8. Select **Group By**, select the fields to group by, and then click **Next**.
9. Select **Sort By**, select the fields to sort by, and then click **Finish**.
10. Save the template as an `.rft` file; for example: `SampleQuery.rft`.

Setting Up a Report Group

Creating report groups is the third step in generating custom reports. A report group enables you to group individual reports together for Task Manager so that you can organize reports in folder structures.




Note:

Nested Report Groups are not supported.

After a report group has been created, you can modify it if necessary. You can duplicate a report group but its name must be unique. You can also delete a report group, however, deleting a report group deletes all reports associated with that group.

To create report groups:

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. From the **Report Groups** tab, click **New**.
4. In the **New Report Group** window, enter:
 - **Name:** Enter a group name for the group of reports.
 - **Description**
 - **Display to User:** Select if you want this report group displayed to the user.
The **Display to User** option enables report writers to have a group of reports hidden while they are working on them.
5. On the **Reports** tab, reorder or edit reports that have been added to the report group using the Move icons

6. Click **Save and Close**.

Creating a Report

Creating report definitions is the fourth step in generating reports. Users can create reports from the queries and assign them to groups.

To create report definitions:

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. Select **Reports**, and then click **New**.
4. In **New Report**, enter:
 - **Name**
 - **Description**
 - **Query**: Select a query.
 - **Template**: Click **Browse** and then browse to a report template. You can upload any supported Oracle Business Intelligence Publisher template format. See [Creating a Template](#).
 - **Report Group**: Select the Group Name for the report from the drop-down menu.
 - **Display to User**: Select if you want the report displayed to a user.
 - **Output Format**: Select a report output format that BI Publisher supports from one of the following options:
 - **xlsx**: Not supported for graphs.
 - **html**: Not supported for graphs and charts.
 - **pdf**
 - **csv**: Does not use a template and is better at faster data retrieval.
 - **csv (Formatted)**: Is best suited for a simple data table with formatted data and does not support images, graphics, or styling in the template.

 **Note:**

The **csv (Formatted)** output format takes additional time to generate the report to honor template formatting when compared to the **csv** format. Therefore, you can select **csv** to generate the data quickly or **csv (Formatted)** to generate formatted template based data.

5. To complete the report definition, you must set the parameters and access:
 - a. For Parameters, select the **Parameters** tab.

Parameters from the query are identified and added to the list. Update the following:

 - **Display Name**
 - **Parameter Type**: The available options are:
 - **Task Manager**
 - **Task Manager Attribute**
 - **Text**

- **Date**
 - **Date/Time**
 - **Number**
 - **Query**
 - **Integer**
 - **True/False**
 - **Yes/No**
 - **User**
- **Display To User:** Clear the checkbox if you do not want the parameter to be displayed and want the value to be used. You can use a single query to create multiple reports. In such scenarios, few parameters are hidden and values defined in the **Parameters** tab are used.
 - **Attribute/Query:** For Attributes, the drop-down lists the attributes for Task Manager. For Query, the drop-down lists all queries of the **Parameter Type**. This can be used to make parameters such as dynamic LOVs. See [Creating a Task Manager Query](#)
 - **Parameter Value:** The default value is displayed.
- b. For Access, select the **Access** tab.
 - c. From the drop-down lists, select the **Application Module**, then select a **Role** for the Application Module.
For example, you can select Task Manager for the Application Module, then select to assign access to the Power User role.

You can use **Add (+)** or **Remove (X)** to change the list of users who can access the report.

 **Note:**

The report must be granted access to at least one application module for the report to display in the corresponding Reports tab.

6. Click **Save and Close**.


Searching and Filtering Queries, Report Groups, or Reports

Using the search field and filter options, you can control the records that you see in the list of queries, report groups, or reports.

To filter queries, report groups, or reports:

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. Select the **Queries, Report Groups, or Reports** tab.
4. Enter search criteria in the **Search** text box.
5. **Optional:** From the filter bar, click on a category to display additional search operators such as **Equals, Does Not Equal, Contains, Does Not Contain, Starts With, and Ends With**.

 **Note:**

- Click **Add a Filter** to view all categories.
- To hide the filter bar, click the **Filter** icon.
- To clear all filters, click **Clear All Filters** in the  icon.

Generating the Report

Generating reports is the final step in the process. After a Service Administrator has built the custom report, any user or group granted access can generate the report.

A Service Administrator can also use REST API commands to generate a report. For detailed information, see [Generate Report for Financial Consolidation and Close and Tax Reporting](#) in REST API for Oracle Enterprise Performance Management Cloud. For large reports, the `runAsync` parameter for report generation in REST API allows reports to run asynchronously (value of true).

To generate reports:

1. From the Home Page, click **Tasks**, and then select the **Reports** tab on the left.
2. Select the report you want to generate. You can use the quick **Search** option to find a report under a selected group.
3. For **Output Format**, select from the following:
 - **xlsx**: Not supported for graphs.
 - **html**: Not supported for graphs and charts.
 - **pdf**
 - **csv**: Does not use a template and is better at faster data retrieval.

 **Note:**

For reports that contain more than 10,000 records, it is recommended to use the **csv** format.

- **csv (Formatted)**: Is best suited for a simple data table with formatted data and does not support images, graphics, or styling in the template.

 **Note:**

The **csv (Formatted)** output option takes additional time to generate the report to honor template formatting when compared to the **csv** format. Therefore, you can select **CSV** to generate the data quickly or **csv (Formatted)** to generate formatted template-based data.

4. Click **Generate**.

5. Enter the **Name**, and then select the **Schedule** and **Period** from the drop down menus.
6. Click **Generate**.
When done, the system displays a "Completed Successfully" status message.

 **Note:**

- Click **Back** to preserve the parameter values that you have selected and regenerate the report.
- Click **Reset** to clear the parameter values that you have selected and regenerate the report.

7. Select **Open with** or **Save File** to save the ZIP file.

The report generation process uses a backend job framework that runs report jobs in the background. If the report has an error, for example, if the size is greater than the recommended size, you see a message stating the error in the Generate Report dialog before the report is generated. For reports with very large number of records, it is recommended to use filtering to break the report down to fewer records.

Understanding Reports Security

This topic describes the security for standard reports and custom reports in **Task Manager**.

 **Note:**

A Service Administrator can also use REST API commands to generate user details report. For detailed information, see [Generate User Details Report for Account Reconciliation, Financial Consolidation and Close, and Tax Reporting](#) in *REST API for Oracle Enterprise Performance Management Cloud*.

Standard (Predefined) Reports Security

A security clause is in all standard report queries. This means that the reports have a security filter enforced on these reports by default. For example, Power User security (established under **Access Control**), to allow access to certain tasks is enforced on reports. A Power User with access to only certain tasks can only see reports for those tasks.

Administrators can edit reports to give users access to a report using the **Access** tab in the **Edit Report** dialog. This ensures that if you allow users to see reports, they can only see data appropriate for them as determined by the Administrator.

The security clause is also included as part of the following predefined **Task Manager** reports:

- At Risk Tasks
- Task Compliance Analysis
- Early Tasks
- Late Tasks
- Task Performance Analysis by Organizational Unit
- Rejected Tasks

- Task Audit Trail
- Users with Late Tasks

Assigning User Access to Standard Reports

An Administrator can decide to give access to standard reports to various users. This is done by using the **Access** tab on the **Edit Report** dialog.

To grant users access to a report:

1. From the Home Page, click **Application**, and then click **Task Manager**.
2. Select the **Task Manager Reports** tab on the left.
3. From **Reports**, select the report you want, and from **Actions**, select **Edit**.
4. On the **Edit Report** dialog, under **Access**, you can use **Add (+)** or **Remove (X)** to change the list of users who can access that report.
5. Click **Save** or **Save and Close**.

Custom Reports Security

For custom reports, you can determine when you create your query whether you want to have a security clause inserted into the query and then assign access to the report to users. This means that the creator of the report determines who should be given access.

Using Task Manager Report Binders

Task Manager report binders enable you to create a history of all activities that occurred as part of a schedule, for example, the Corporate Q1 Close. You use filters to specify the schedule, tasks to include, and which task information to include.

Information for all tasks that meet the binder filter criteria are output in HTML to a ZIP file. They contain HTML and other files. When you extract the ZIP file, a directory structure is formed, in which you can access the HTML file to view the report binder. Because the report is self-contained in one file, it can easily be copied, printed, or emailed for internal or external reviews.

Generating Report Binders

The Generate Report Binder dialog box enables you to specify the parameters needed to create a report. When you open a schedule in a view and run Generate Report Binder, the report binder is applied to the current view and incorporates only the tasks within the current filtered view.

The report binder is generated and returned through the browser as a document. When you run Generate Report Binder, you have the option to open it immediately or to save it to disk as a ZIP file.

You can generate report binders for multiple schedules at a time. This can be helpful if your application has a large number of schedules.

To generate a report binder:

1. From the list of Schedules, select one or more schedules for which to generate a report binder.
2. From the **Actions** dropdown, select **Generate Report Binder**.
3. For **Report Binder Name**, enter a name.

4. For **Description**, enter a binder description.
5. From **Optional Components**, select the task components that you want to display in the report:
 - **Alerts**
 - **Comments**
 - **Attachments**

 **Note:**

Including attachments in the report greatly increases the size of the report and may impact the performance.

6. Click **Generate**.
7. From File Download, select **Save**.
The Save As dialog box is displayed, and the ZIP file name is displayed at the bottom.
8. Select a directory for the ZIP file, click **Save**, then **Close**.

Viewing Report Binders

When you generate a report binder, it is output in one zipped file. The ZIP file name is the name that you specified for the Report Binder. The report pages are merged into an HTML report, with page breaks for sections as required, so that the report can be printed with a print command. If you choose to include attachments, a separate attachment appendix, containing links to attachments with corresponding tasks and alerts, is created, which you can print separately. All attachments are downloaded to separate folders.

If you saved the report binder as a ZIP file, you can extract everything from the ZIP, which creates a directory structure with the same name as the report binder. You can see the report binder by opening the HTML page in the directory. The first report page contains information on the report binder, the schedule, and displays a list of tasks and alerts available in the report binder. You can navigate to the Tasks section to see task details such as status, Assignee, start and end dates, and duration. If a task has not started, the projected (scheduled) date is displayed. Each task is a link to a Task Detail page. By default, it includes sections for Attributes, Instructions, Questions, Workflow, Predecessors, and History. If you selected the options to include Alerts and Comments when you generated the report binder, those sections are also displayed.

The first page also contains a list of alerts into which you can drill further. From the Alert Detail page, you can navigate to the associated task.

To view report binders:

1. Navigate to the directory in which you downloaded the ZIP file, and double-click the file.
2. Extract the ZIP files to the desired directory.
3. Navigate to that directory and locate the subdirectory that matches the ZIP file name.
4. From the subdirectory, double-click `report_binder_name.html` to view the report binder.

Working with Views and Filters

This chapter describes how to create, manage, and use views and filters.

Related Topics

- [Working with Filters](#)
- [Working with Views](#)

Working with Filters

Use filters to limit the records displayed in your views and reports.

Related Topics

- [About Filters](#)
- [Viewing the Existing Saved Filters](#)
- [Creating a New Filter](#)
- [Using the Filter Bar to Adjust Your View](#)
- [Clearing Filter Conditions](#)
- [Removing a Filter](#)
- [Editing a Filter](#)
- [Duplicating a Filter](#)
- [Saving a Filter](#)
- [Applying a Saved Filter](#)
- [Publishing a Filter](#)
- [Deleting a Filter](#)
- [Displaying Columns for Filters](#)
- [Reordering Columns for Filters](#)

About Filters

Filters control the records that you see in list views and reports.

You can provide values for the attributes that you want to filter on and the operator to use for filtering. Typical operators include the following: equal to, not equal to, starts with, ends with, contains, greater than, less than, and so on. The available operators depends on the attribute's data type. For example, operators for filtering text values are different than the operators for filtering numeric values. Filters are combined together using and logic, which means only those records that meet all filter criteria are displayed.

You can also create more complex filters using and as well as or logic and grouping logic to determine the order in which filters are applied.

You can save a filter for future use. However, for setting up your views, saved lists can be used. See [Working With List Views](#).

Service Administrators and power users can publish filters so that they are accessible to other users and these are then marked as Public. Service Administrators and power users can use saved filters to test rules.

Viewing the Existing Saved Filters

Filter definitions that were saved are available in the Filters tab of Configuration.

To view saved filters:

- 1.
2. Click **Filters** to see existing filters.
Public filters are marked with a green check mark.

Creating a New Filter

You create a new filter to control the display of rows as per your requirement.


To create a new filter:

- 1.
2. Click New (+) to add a new filter. The New Filter dialog appears.
3. In **Name**, enter a unique name for the filter.
4. In **Description**, enter a description (optional) for the filter.
5. In **Type**, select the type of filter being created.
6. In the Filter Definition section, click **Create Condition** to create a condition that will be used to filter data. You can specify multiple conditions and condition groups.
For each condition, specify the following:
 - (Condition Groups only) Conjunction: Select And or Or. These state how this condition or group relate to prior sibling conditions or groups. This field is enabled only if the selected node is not the first child of its parent node.
 - Attribute: An attribute is a field or value that a condition will be comparing to a value for inclusion in the result set of a filter. However, for the case of a filter, an attribute denotes more than the list of user-defined attributes.
 - Operator: States what kind of evaluation to perform against the attribute. For example, Equals, Between, Does not Equal, Greater than, Is blank, Is not blank, Less than, Not between.
 - Value: Specifies what values to compare the attribute against. The type of attribute determines what input field is available.

Using the Filter Bar to Adjust Your View

The filter bar works across many different areas to filter data displayed in a list. You can add multiple filters to a list.

Here's an example of the filter bar on the Filter configuration. Note that the default of All is used. This means that all objects are displayed unless you choose to make a selection of filter attributes.

Name	Description	Public	Type	
No Condition	No Condition	All	All	

To add a filter to your list:

1. Click **+ Add a Filter** to display a list of attributes that you can use to filter data.
The list of attributes is different, depending on the list page on which you are adding the filter.
2. Select the filter attribute you'd like to add.
The selected attribute appears on the filter bar.

Using a Date Range

Some filter attributes have a date range. For example, if you want to add another filter attribute to the filter bar, such as **Created On**, you can use the date range feature. Narrow your view by using a date value and then use the **Operator** field to set the conditions for dates values that meet this criteria.

The screenshot shows the Oracle filter bar for the 'Created On' attribute. The filter is currently set to 'No Condition'. The 'Operator' dropdown is set to 'Equals'. The 'Value' field contains the placeholder text 'mmm dd, yyyy h:mm a'. A date picker calendar is open, showing the month of September 2022. The date '21' is selected, indicated by a blue circle. The calendar includes navigation arrows, month/year dropdowns, and a grid of days from Sunday to Saturday.

Clearing Filter Conditions

When you clear a filter, the conditions applied by this filter on the displayed data are removed.

After adding the filter to the Filter bar, you can do one the following to clear the filter conditions:

- Hover on each filter, click the ******* icon, and click **Clear** to clear and reset the condition for the specific filter.
- Click the ******* icon on the right side of the Filter bar and select **Clear All Filters**. The conditions for all the filters in the Filter bar are cleared and reset.

Removing a Filter

You can remove a filter from the Filter bar.

Removing a filter also clears the conditions applied by the filter on the listed data.

To remove a filter from the filter bar:


1. Click the icon ******* adjacent to the filter.
2. Click **Remove** to remove the filter from the Filter bar.

On a few pages, you can't remove the default filters.

Editing a Filter

Edit a filter to modify its definition.


To edit a filter:

1. Open the Filters page.
2. Select the filter you want to edit and click the  icon.
The Edit Filter dialog is displayed.
3. Update the required information.
4. Click **OK**.
The filter details are updated.

Duplicating a Filter

You duplicate a filter to create a copy of an existing filter.

To duplicate a filter:

1. On the Filters page, select the filter you want to duplicate and click the  icon.
A copy of the filter is displayed on the page.
2. Click the copied filter.
The Edit Filter window is displayed.
3. Update the required information.
4. Click **OK**.
The filter details for the copied filter are updated.

Saving a Filter

Saving a filter definition enables you to easily reuse these filter settings when required (instead of manually setting up filters when required).

By default, filters are saved as private filters. To enable other users to use the same saved filters, you can publish the filters.

To save a filter:

1. Use the **Add a Filter** to create a filter for the required attributes.
2. From the Actions menu, select **Save Filter**.
The Save Filter dialog appears.
3. In **Name**, enter a unique name for the filter.
4. In **Description**, enter an optional description for the filter.
Notice that the Filter Definition section displays the selected filter conditions.
5. Click **OK**.


Applying a Saved Filter

You can apply saved filters to restrict the displayed data. All the saved filters are displayed when you click the ... icon on the top-right side of a page. Click any of these filters to apply it for the data. The data will be displayed based on the defined filter conditions.

Publishing a Filter

Service Administrators can publish a filter to make it available to other users. Publishing a filter marks it as **Public**.

To publish a filter:

1. On the Filters page, select the filter you want to publish, and click the  icon. A message asking for confirmation is displayed.
2. Click **Yes**. A copy of the filter is created and the **Public** column displays icon indicating the filter is published.


Note:

Only Power Users and Administrators can publish filters.

Deleting a Filter

Delete a filter to remove its definition from the system.

To delete a filter:

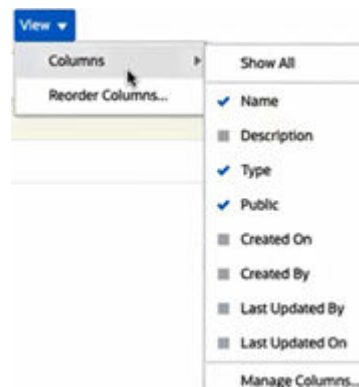
1. On the Filters page, select the filter you want to delete and click the  icon. A message is displayed asking for confirmation.
2. Click **Yes**. The filter is deleted.

Displaying Columns for Filters

To display the columns for the filters:





1. On the Filters page, click **View** and then **Columns**.
2. Select the columns you want to display or click **Show All** to display all the columns.

You can click **Manage Columns** and hide or show the columns that are displayed in **View > Columns**.



Reordering Columns for Filters

To reorder the columns:

1. On the Filters page, click **View** and then click **Reorder Columns**.
2. Select the column name that you want to reorder and use the following icons to move it to the required position:
 - : Move selected items to top of the list
 - : Move selected items up one in the list
 - : Move selected items down one in the list
 - : Move selected items to bottom of the list
3. Click **OK**.
The columns are displayed based on the specified order.

Working with Views

Views provide multiple ways to visualize and analyze your data.

Related Topics:

- [About Views](#)
- [Working With List Views](#)
- [Working with Pivot Views](#)
- [Working with Chart Views](#)
- [Working With Gantt Chart Views](#)
- [Working With Calendar Views](#)
- [Saving Views](#)
- [Editing Saved Views](#)
- [Publishing Views](#)
- [Setting a Default View](#)

About Views

Oracle Enterprise Performance Management Cloud products provide you with great flexibility in the ways in which you can visually view your data.

Types of Views

- List view: Provides a table display of information in columns and rows for the objects which meet the filter conditions on the page.
- Pivot view: Allows you to create summaries of numeric attribute data by attribute value.
- Chart view: Displays data in the form of charts.

Use the View selector () to move between views.

Choosing the Compact Display of Views

When you're viewing items in a List or Pivot view, you've the ability to view the data in a compact format. The **Compact** option works as a toggle switch and displays more rows of information. Click **Compact** from the **View Selector** to display the records in a compact format.

If you save a view, your choice of Compact will also be saved.

Objects for Which Views are Available

About Filtering Data in Views

You can use filters to restrict the data displayed in the views. Filters can be created at run time (after the data is displayed), or when designing the chart or pivot view.

You can filter data in the following ways:

- **Filter bar in a view**
Using filters from the Filter bar enables users to dynamically decide the criteria that must be applied to the view data. The specified filter condition is applied at run time, after the view is generated and the display is updated to reflect the applied condition. See [Using the Filter Bar to Adjust Your View](#).
- **Filter in the Layout tab of the Edit Pivot or Edit Chart dialogs**
This filter is added by the view designer. The specified conditions are applied on the data before the data is included in the pivot view or chart view. You can create a filter for each data set listed in the **Legend (Series)** section. See [Setting the Chart Layout](#).

Working With List Views

Use list views to display records in a simple tabular form.

Related Topics

- [About List Views](#)
- [Customizing the List View](#)
- [Task Manager Example: Customizing the List View for Schedule Tasks](#)

About List Views

List views present records for on screen viewing and provide drill-down capabilities to the record details. They display objects in a vertical list, in the form of rows and columns.

To see more rows displayed in the list view, use **Compact** from the **View Selector** at the right hand side.

List views provide the following reporting features:

- Columns can be added to or removed from the view and re-ordered.
- Filters can be applied to limit the records included in the list.
- List views can be printed or exported to Excel for ad-hoc reporting.

Customizing the List View

The list view displays with the default columns selected. You can easily change the default columns to customize your view.

To customize a list view:

1. Display the list view for the required object.
2. In the **Actions** drop-down, select **Select Columns**.
The Select Columns dialog appears. The columns that are currently displayed are listed in the **Selected** section.
3. In the **Available** section, select the attributes that must be included in the list view and use the arrow keys to move them to the **Selected** section.
4. Click **OK**.

Task Manager Example: Customizing the List View for Schedule Tasks

Assume that you want to see more information such as when was the task created.

Use the following steps:

1. From **Home**, click **Tasks** and then click **Schedule Tasks**.
2. From the **Actions** drop-down, click **Select Columns**.
The Select Columns dialog appears. Use this to add additional columns to view information about the tasks.
3. In **Available**, scroll down the list, select **Created On**, and use the arrow keys to move it to **Selected** on the right side.
4. Click **OK**.

The Schedule Tasks page displays the **Created On** column for the tasks.

Name	Task ID	Status (icon)	Start Date	End Date	Task Type	Created On
01 Planning Process	01_Plan	🟢	Jun 19, 2023 9:00 AM (Day 6) EST	Jun 21, 2023 5:00 PM (Day 8) EST	Parent Task	Jun 6, 2023 10:47 AM
001 - Set Strategic Goals	001_Plan	🟢	Jun 19, 2023 9:00 AM (Day 6) EST	Jun 19, 2023 5:00 PM (Day 6) EST	Basic Task	Jun 6, 2023 10:47 AM
002 - Allocate Targets	002_Plan	🟢	Jun 19, 2023 9:00 AM (Day 6) EST	Jun 19, 2023 5:00 PM (Day 6) EST	Enter Form Data	Jun 6, 2023 10:47 AM
003 - Expand Services Product Line	003_Plan	🟢	Jun 20, 2023 9:00 AM (Day 7) EST	Jun 20, 2023 5:00 PM (Day 7) EST	Basic Task	Jun 6, 2023 10:47 AM
004 - Complete Bottom-Up Operating Plan	004_Plan	🟢	Jun 19, 2023 9:00 AM (Day 6) EST	Jun 21, 2023 5:00 PM (Day 8) EST	Enter Form Data	Jun 6, 2023 10:47 AM

Working with Pivot Views

Use pivot views to summarize your data.

Related Topics

- [About Pivot Views](#)
- [Customizing a Pivot View](#)
- [Example: Viewing Organizational Units Based on Task Status](#)

About Pivot Views

A pivot view enables you to create summaries of the attribute data.

There is a default layout for each object that supports pivot views. However, you can customize the pivot view based on your requirement.

Customizing a Pivot View

You can customize a pivot view to summarize the data based on your business requirement. Data can be grouped by a maximum of two attributes.

To customize a pivot view:

1. Display the pivot view for the required object.
2. Click the **Edit** icon at the top-right.
The Edit Pivot dialog appears. It contains three tabs: **Properties**, **Layout**, and **Columns**.
3. In the **Properties** tab, enter the basic view properties. See [Setting Pivot View Properties](#).
4. In the **Layout** tab, specify the details of how data must be grouped. See [Setting Pivot View Layout](#).
5. In the **Columns** tab, enter the data labels and the sorting order for the data. See [Specifying Pivot View Columns](#).
6. Click **OK**.



Note:

If you drill down into a , update one or more details, save it, and return to the pivot view, these changes are not visible. You must refresh the pivot view to see the latest updates.

Setting Pivot View Properties

Use the **Properties** tab of the Edit Pivot dialog to set the basic properties of a pivot view.

To set the pivot view properties:

1. In **Background**, select one of the following:
 - **No Fill**: No background color is used
 - **Solid**: Select the color to be used as the background color. You can optionally select a color in **Gradient**.
2. In **Header Color** and **Header Size**, select a color and font size for the pivot view header.
3. In **Data Color** and **Data Size**, select a color and font size for the data displayed in the pivot view.
4. Select **Missing Values as Zero** to display a zero when data values are missing. This includes missing data values and values that are missing because of an applied filter.
5. In **Period**, select one of the following:
 - **Selection**: Use the selection from the Period filter as-is.
 - **Latest in Selection**: Use the latest Period chronologically in the filter.
 - **Prior from Selection**: Create a new filter of the prior X periods based on the latest period in the filter.

The Period selection allows you to fine tune the list of Periods for the particular pivot view. This can be done so that pivot views sharing the same global period filter can

display different amounts of data, or to make it easier to show a distribution of period data based on a single local period selection.

Setting Pivot View Layout

The **Layout** tab specifies how data in the pivot view must be summarized. Filters can also be applied on the data that is considered for summarizing.

Specify the following layout details:

1. In the **X Axis** section, specify details about the primary grouping to use in the view.
 - In **Type**, select one of the following: None, Attribute, Date, User, Yes/No, or True/False. If you set the **Type** to Attribute, in **Attribute 1**, select the attribute that must be used to group data. For example, Organizational Unit. Optionally, you can create another subgroup, within the **Attribute 1** group, by selecting another attribute in **Attribute 2**.
 - In **Sort**, select the attribute and the order on which data must be sorted.
 - Select **Swap Rows and Columns** to swap the display of rows and columns in the grid.
2. In the **Legend (Series)** section, click the **Add** icon to create one row for each attribute for which you want to summarize data. This summary is created within the specified **Type**. There must be at least one row in this section.

For each row, specify the following details:

- In **Value**, select the attribute whose data must be summarized. For example, Approvers (Count).
- In **Aggregation**, select the aggregation operation to be performed on the summarized data. It will default to the aggregation method specified on the attribute that you selected.

Note:

If you select a non-numeric attribute in **Value**, the only **Aggregation** available is **Count**.

- In **Categories**, optionally select the attribute by which the data is summarized, within the **Value** group.
 - In **Group By**, select an attribute from the list. This is applicable only when **Type** is set to a value other than Attribute.
 - Click **Filter** to apply a filter on the data that is included in the pivot view. This filter is first applied on the data and then the data is summarized using the specified criteria. By default, the first clause in a filter condition is displayed as the label for this filter.
3. Click **OK**.

Considerations When Using Aggregation

Specifying Pivot View Columns

Use the **Columns** tab to customize the labels and order of data displayed in the pivot view.

Each row in this tab will be displayed as a column in the pivot view. The number of rows is determined by what is specified in **X Axis** and **Categories** in the **Layout** tab.

To customize the display of the pivot view:

- In **Label**, enter the label that must be displayed for this column.
- Select **Sort** to sort the pivot data by this column. Click the icon next to this option to sort in ascending or descending order.
- Use the arrows on the right to change the order in which the columns are displayed. This list of columns are displayed from left to right in the pivot view.


Example: Viewing Organizational Units Based on Task Status

This example describes how to create a pivot view that groups organizational units based on the status of the tasks. The following image displays the Pivot view.

The screenshot shows a pivot table titled 'Schedule Tasks'. The table has four columns: 'Organizational Unit', 'Closed', 'Open', and 'Pending'. The data is as follows:

Organizational Unit	Closed	Open	Pending
EMEA	17	25	4
North America	17	25	4
APAC	16	25	4
Corporate	19	25	4

Use the following steps to create the above Pivot view:

1. In the Home page, click **Tasks** to display the Schedule Tasks page.
2. Click the  icon and select **Pivot View**.
3. Click the **Edit** icon to configure the Pivot view as per your requirement.
4. On the **Properties** tab:
 - **Background:** No Fill
 - **Header Size:** 13
 - **Data Size:** 14
 - **Period:** Selection
5. On the **Layout** tab:
 - In **X-Axis**:
 - In **Type**, select **Attribute**.
 - In **Attribute1**, select **Organizational Unit**.
 - In **Sort**, select **Organizational Unit** from the first drop-down list and then select **Descending** from the second drop-down list.
 - In **Legend (Series)**:
 - In **Value**, select **Task**.
 - In **Categories**, select **Status**.
6. On the **Columns** tab, select the displayed labels.
7. Click **OK**.

Working with Chart Views

Chart views enable you to visualize your data.

Related Topics

- [Overview of Chart Views](#)
- [Creating Chart Views](#)
- [Example: Creating a Chart to Display Task Status by Month](#)
- [Example: Creating a Chart to Display Plan versus Actual End Date](#)
- [Example: Creating a Chart to Display Task Execution by Organization Unit](#)

Overview of Chart Views

Related Topics

- [About Chart Views](#)
- [About Chart View Properties](#)
- [Types of Chart Views](#)

About Chart Views

A chart provides a visual representation of data.

Charts are generated dynamically based on your business process data. Click an area within a chart, for example, an area within a pie chart, to drill-down and view details about the information summarized by that area. The chart and pivot view layouts are linked, allowing you to quickly switch between the chart or pivot view.

When you configure settings for a chart view, the system remembers these settings. If you close the chart view, perform other actions in your business process, and then return to the chart view, the chart is displayed using the previous settings.

About Chart View Properties

Chart properties include basic details such as the type of chart, chart orientation, and background. The properties that you can set for a chart depend on the type of chart.

Chart Property	Applicable Chart Types	Description
Type	All	Type of chart See Types of Chart Views .
Background	Area, Bar, Column, Combination, Doughnut, Line, Pie, Tile	Background color used in chart This color applies to the entire chart area, from border to border. You can choose not to use a background color, in which case a white background is used for the chart. If you specify a background color, an optional gradient also can be specified.

Chart Property	Applicable Chart Types	Description
Label Position	Area, Bar, Column, Combination, Line	Location of the data labels in relation to the elements The options available depend on the type of chart. For example, bar charts have the following label options: No Label, Center, Inside Edge, or Outside Edge.
Bar Label Position	Combination	Location of the data labels in the bar chart
Grid Lines	Area, Bar, Column, Combination, Line	Grid lines used to divide the chart area
Orientation	Area, Bar, Column	Orientation of the chart - Vertical or Horizontal
Missing Values as Zero	Area, Combination, Line, Tile	Displays a zero (instead of a blank) when the data for a particular element is missing When you select this option, all missing values are displayed as zero. This includes missing data values and values that are missing because of an applied filter.
Dual-Y Axis	Area, Bar, Column, Combination, Line	Appears on the opposite side of the chart from the primary Y-axis The scale of the secondary Y-axis reflects the values for the associated data series. While the secondary Y-axis can be used with any line and bar chart type, it is more commonly used with the combination chart type, which helps to distinguish the data series that are plotted on the secondary Y-axis. For example, select Bar for the primary Y-axis and Line for the secondary Y-axis. When the data values in a chart vary widely from data series to data series, or when you have mixed types of data (for example, currency and percentages), you can plot one or more data series on a secondary (vertical) Y axis. You can also plot the secondary Y-axis as a split dual chart, where the secondary Y-axis appears with its data series below the original chart. In this case you can use any bar or line chart type.

Chart Property	Applicable Chart Types	Description
Line Weight	Combination, Line	Width of the line in the chart The default is 5 pixels.
Bar Label Position	Combination	Position of the label for the data set displayed as a bar chart
Display as Percentage	Doughnut, Pie	Values for each data set displayed in terms of percentages (instead of as a numerical value)
3D chart	Pie, Tile	3-dimensional chart format

Types of Chart Views

You can create the following types of chart views:

- **Area**
Displays a shaded area to represent each data set
- **Bar**
Displays a graphical summary of multiple data values for comparison purposes
Bar charts can be plotted vertically or horizontally
- **Column**
Displays stacked bars that represent different data sets on top of each other
The height of the resulting bar shows the combined result of the data sets.
- **Combination**
Provides a visualization that lets you merge into one chart any combination of bar, line, and area charts.

Use this type when you have two different sets of data that are plotted on the y-axis. You can add a secondary Y-axis on the opposite side from the primary Y-axis. Adding a secondary Y-axis lets you display the scale for one measure that doesn't scale appropriately with the other measures on the chart; for example, showing a percentage measure and a currency measure on the same chart.
- **Doughnut**
Displays a circular graph which is divided into segments to compare data sets to one another

The blank center displays the sum of all data sets.
- **Line**
Enables users to visualize a trend in data over intervals of time
- **Pie**
Displays a circular graph which is divided into slices to compare data sets with one another
- **Tile**
Enables users to select specific values from a data set, to display in separate tiles
It emphasis a small number of data points or an individual data point.

The default chart view is a Bar chart. You can customize your chart display and change the default chart view.

Creating Chart Views

Create charts to portray your application's data graphically.

To create a chart view:

1. Display the chart view for the required object.
2. From the **View Selector** at the top-right of the page, select **Chart View**.
If this is the first time you're accessing the chart view, the default chart view layout is displayed.
3. Click **Edit** at the top-right to display the Edit Chart dialog. It contains three tabs: **Properties**, **Layout**, and **Legend**.
4. In the **Properties** tab, specify the required chart properties, as described in [About Chart View Properties](#).
5. Enter the information required to create the chart, as described in the following topics:
 - [Setting the Chart Layout](#)
 - [Setting the Chart Axis](#)
 - [Setting the Chart Legend](#)
6. Click **OK** to save the chart definition and then display the chart.

Click any area within the chart view to drill-down and display all the records that are aggregated by the selected area. The records are displayed in the Details dialog. You can click any link within this dialog to access the details of that individual record.



Note:

If you drill down into an individual record, update one or more details, save it, and return to the chart view, these changes are not visible. You must refresh the chart view to see the latest updates.

Setting the Chart Layout

Use the **Layout** tab to specify the data sets that must be plotted on the x-axis and y-axis of the chart.

To set the chart layout:

1. Open the **Layout** tab of the Edit Chart dialog.
2. In the **X Axis** section, specify the data that must be plotted on the x-axis of the chart.
 - In **Type**, select the type of data. Options include None, Attribute, Date, User, Yes/No, and True/False.
 - If you set the **Type** to **Attribute**, you must specify at least one attribute that is plotted on the x-axis. You can specify a maximum of two attributes.

In **Attribute 1**, select the first attribute to plot on the x-axis. Optionally, in **Attribute 2**, select the second attribute to plotted on the X axis. The various combinations of Attribute 1 and Attribute 2 values are plotted.

- In **Sort**, select **Ascending** or **Descending** to sort your X axis data.
3. In the **Legend (Series)** section, specify one or more data sets that must be plotted along the Y axis of the chart view.

For example, if you define three data sets, then three values are plotted on the y-axis.

Within each data set, you can perform aggregation operations or group data. Optionally, you can apply a filter to restrict the data that is selected when computing the aggregation on the data set.

For each data set in this section, specify the following:

- In **Value**, select the value that must be plotted. For example, Amount or Status.
- In **Aggregation**, select the aggregation that must be performed on the selected value. See "Considerations When Using Aggregation" at the end of this topic.
- (Optional) In **Categories**, select the attribute that must be used to categorize data within the data set. Use Categories to break your graph into more smaller details.
- (Optional) In **Group By**, select the attribute by which Date type data is grouped. If **Group By** is set to a date, a new column **Date Aggregation** is displayed.
- (Optional) In **Filter**, click the Filter icon to add a filter condition. This condition further refines the data shown for the data set within the chart view. It is applied before the data is included in the chart view.

By default, the first clause in a filter condition is displayed as the label for this filter.

4. Click **OK** to save the chart view settings.

Setting the Chart Axis

Chart Axis properties affect the visual display of the chart's axis labels. You can create a title and label for the X axis, and the primary and secondary Y axis of the chart. You can also edit the text and number format of the Y axis, and define a custom range for both Y axes.



Note:

This tab doesn't display for chart views with **Type** set to Doughnut, Pie, or Tile.

To define the chart axis:

1. Open the **Axis** tab of the Edit Chart dialog.
2. Select **X Axis** and specify the following (only for chart views with **Type** set to Date in the **Layout** tab):
 - **Interval:** Select **Auto**, **Daily**, **Monthly**, or **Yearly**.
 - **Maximum:** Select **Auto** or **Fixed**. For **Fixed**, select a date.
 - **Minimum:** Select **Auto** or **Fixed**. For **Fixed**, select a date.
3. Click **Y Axis** and specify **Auto** or **Fixed** for the following: **Minimum**, **Maximum**, **Major Unit**, and **Minor Unit**.
4. If **Dual Y Axis** is selected for the chart in the **Properties** tab, click **Dual-Y Axis** and specify the **Minimum**, **Maximum**, **Major Unit**, and **Minor Unit**.
5. Click **OK** to save the chart view settings.

Setting the Chart Legend

Legend properties affect the visual display of the chart's legend.

You can change the position of the legend, as well as display a title for the legend, change the background and border colors, and edit the font and format of chart labels.

For a Combination chart, the **Legend** tab contains one new column named **Type**. You can select the type for each configured legend (series). For example, **Type = Bar** for one legend and **Type = Line** for the other.

To define the chart legend:

1. Open the **Legend** tab of the Edit Chart dialog.
2. In **Legend Position**, select the position of the data labels in relation to the elements in a chart.

The available options are **No Legend**, **Left**, **Right**, **Top**, or **Bottom**.

3. In **Palette**, select the color palette used when displaying the chart view.
4. In the **Series** table, one row is displayed for each legend specified in the **Layout** tab.

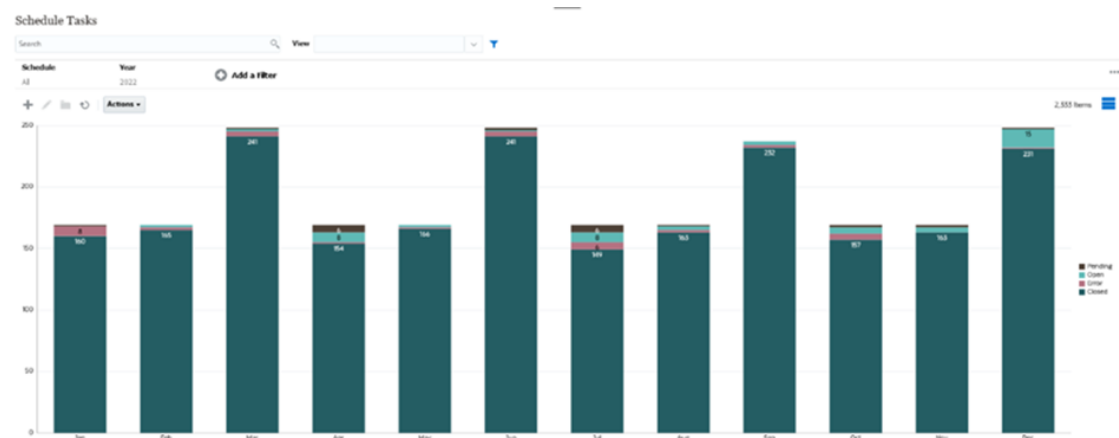
For each data set:

- In the **Label**, enter the label that must be displayed for this data series in the chart.
 - Select **Dual-Y** for the data series that must be displayed on the secondary Y axis.
5. Click **OK** to save the chart view settings.

Example: Creating a Chart to Display Task Status by Month

This example creates a chart which summarizes the completion status of all tasks by period. This can help identify if there are certain tasks which are not completed period over period.

The generated chart is displayed below. Click any area within the chart to drill down and view of the individual records that comprise that aggregated area.

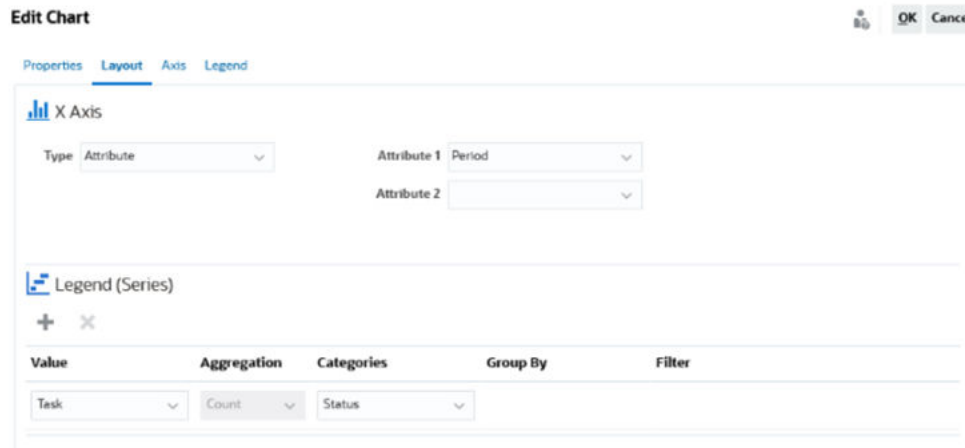


To create this chart:

1. From the Home page, click **Tasks**. Click **Schedule Tasks** to display the Task List.
2. From the **View Selector** at the top-right of the page, select **Chart View**.

The Chart view appears, with a default chart displayed.

3. Click **Edit** at the top-right to display the Edit Chart dialog.
4. In the Properties tab, specify the following:
 - In Type, select **Column**.
 - Deselect **Grid Lines**.
 - In Period, select **Selection**.
5. In the **Layout** tab, specify the following:

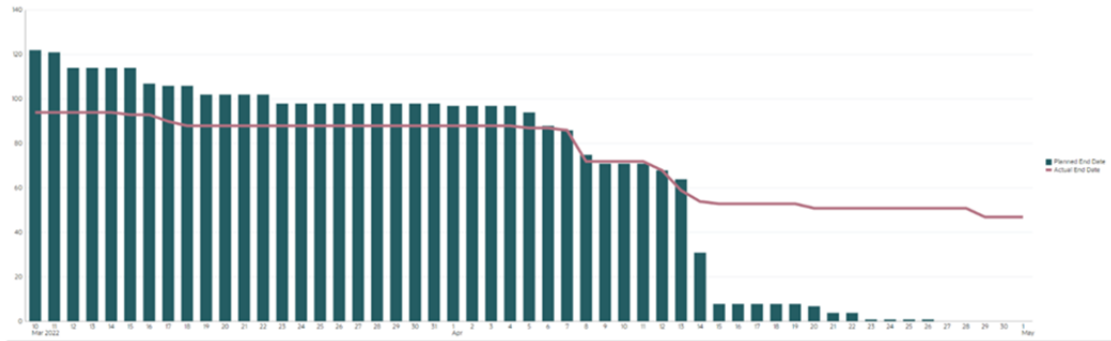


- In the **X-Axis** section:
 - In **Type**, select **Attribute**.
 - In **Attribute1**, select **Period**.
 - In the **Legend (Series)** section:
 - In **Value**, select **Task**.
 - In **Categories**, select **Status**.
6. In the **Axis** tab, leave the default settings as is.
 7. In the **Legend** tab, specify the following:
 - In **Legend Position**, select **Right**.
 - In **Palette**, select **Redwood**.
 8. Click **OK**.

Example: Creating a Chart to Display Plan versus Actual End Date

This example visualizes Tasks planned vs actual completion over time - allowing you to see if your schedules are running ahead or behind schedule. The chart shows all of the tasks end dates that fall on or after a certain date. This will show a large number of tasks within the beginning of the schedule and gradually go down until the final task in the schedule.

The generated chart is displayed below. Click any area within the chart to drill down and view of the individual records that comprise that aggregated area.



To create this chart:

1. From the Home page, click **Tasks**, and then click **Schedule Tasks** to display the Task List.
2. From the **View Selector** at the top-right of the page, select **Chart View**. The Chart view appears with a default chart displayed.
3. Click the **Edit** icon at the top-right to display the Edit Chart dialog.
4. In the **Properties** tab, specify the following:

Edit Chart [Task Burndown - Plan vs Actual End Date] OK Cancel

Properties | Layout | Axis | Legend

Title: Task Burndown - Plan vs

Type: Combination

Background: No Fill Solid Gradient

Label Position: No Label Center Above Point Below Point Before Point After Point

Bar Label Position: No Label Center Inside Edge Outside Edge

Line Weight: 5

Grid Lines:

Missing Values as Zero:

Dual-Y Axis:

Period: Selection Latest in Selection Prior from Selection

- In **Type**, select **Combination**.
 - In **Background**, select **No Fill**.
 - In **Label Position**, select **No Label**.
 - In **Bar Label Position**, select **No Label**.
 - Select **Line Weight** as **5**.
 - Select **Grid Lines**.
 - Deselect **Dual Y Axis**.
 - In **Period**, select **Selection**.
5. In the **Layout** tab, specify the following:

Properties **Layout** Axis Legend

X Axis

Type: Date

Legend (Series)

+ ✕

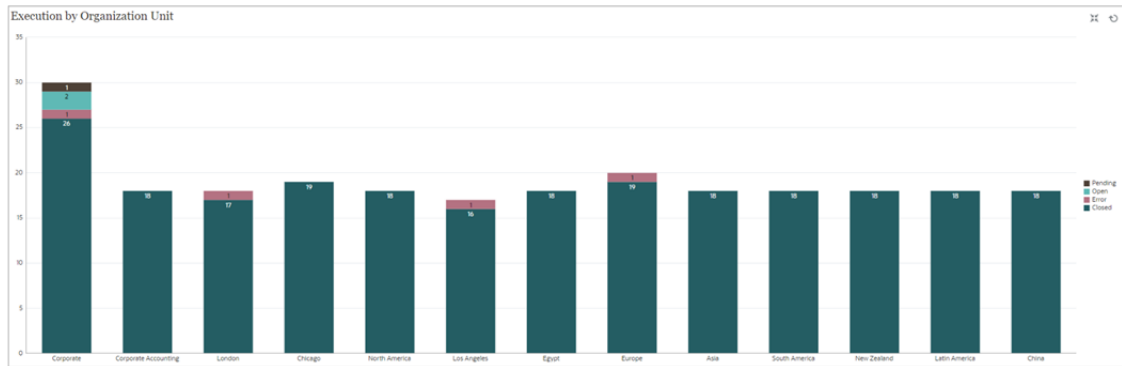
Value	Aggregation	Categories	Group By	Date Aggregation	Filter
Task	Count	None	End Date (Assigned, I	On or After	
Task	Count	None	End Date (Actual, Local)	On or After	

- In the **X-Axis** section, for **Type**, select **Date**.
- In the **Legend (Series)** section, enter 2 values:
For the first entry:
 - In **Value**, select **Task**.
 - In **Categories**, select **None**.
 - In **Group By**, select **End Date (Assigned)**
 - In **Date Aggregation**, select **On or After**.
 For the second entry:
 - In **Value**, select **Task**.
 - In **Categories**, select **None**.
 - In **Group By**, select **End Date (Actual, Local)**
 - In **Date Aggregation**, select **On or After**.
- 6. In the **Axis** tab, leave the default settings as is.
- 7. In the **Legend** tab, specify the following:
 - In **Legend Position**, select **Right**.
 - In **Palette**, select **Redwood**.
- 8. Click **OK**.

Example: Creating a Chart to Display Task Execution by Organization Unit

This example creates a chart which shows task completion by organization unit allows you to monitor how each organization is doing completing their tasks.

The generated chart is displayed as shown. Click any area within the chart to drill down and view of the individual records that comprise that aggregated area.



To create this chart:

1. From the Home page, click **Tasks**. Click **Schedule Tasks** to display the task list.
2. From the **View Selector** at the top-right of the page, select **Chart View**.
The Chart view appears, with a default chart displayed.
3. Click **Edit** at the top-right to display the Edit Chart dialog.
4. In the **Properties** tab, specify the following:
 - In **Type**, select **Column**.
 - Deselect **Grid Lines**.
 - In **Period**, select **Selection**.
5. In the **Layout** tab, specify the following:

Edit Chart [Execution by Organization Unit] Big OK Cancel

Properties **Layout** Axis Legend

X Axis

Type: Attribute Attribute 1: Organizational Unit Attribute 2:

Legend (Series)

+ ×

Value	Aggregation	Categories	Group By	Filter
Task <input type="text"/>	Count <input type="text"/>	Status <input type="text"/>		

- In the **X-Axis** section:
 - In **Type**, select **Attribute**.
 - In **Attribute1**, select **Organizational Unit**.
 - In the **Legend (Series)** section:
 - In **Value**, select **Task**.
 - In **Categories**, select **Status**.
6. In the **Axis** tab, leave the default settings as is.
 7. In the **Legend** tab, specify the following:
 - In **Legend Position**, select **Right**.

- In **Palette**, select **Redwood**.
8. Click **OK**.

Working With Gantt Chart Views

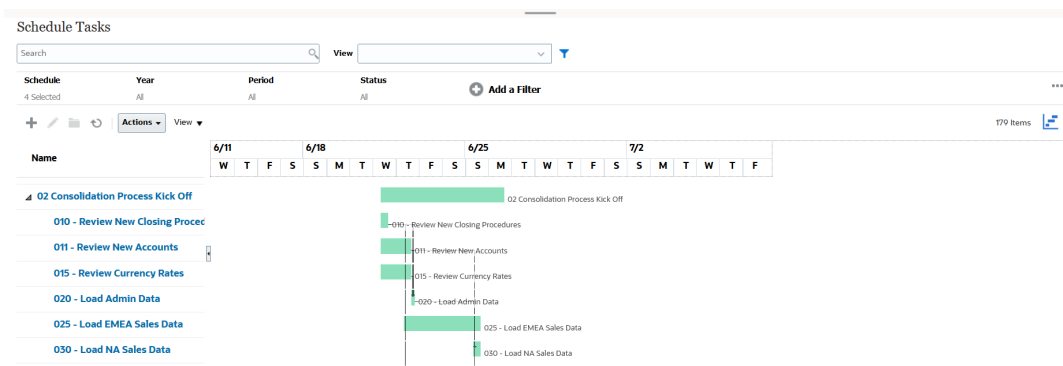
Gantt charts displays a timeline for a schedule that graphically represents the duration of tasks and the dependencies between them. You can view the predecessor relationships between tasks. Bars represent duration, and arrows represent dependencies. You can also see the parent-child task relationships in the hierarchy.

You might choose to use the Gantt Chart view when you create a template to see the predecessor relationships between the tasks, or to verify the precedence order after adding tasks to a schedule.

Gantt Chart view is available for **Scheduled Tasks**.

To view the data in a Gantt Chart:

1. On the Home page, click **Tasks**, and then click **Schedule Tasks**.
2. Click the **View Selector** icon and choose **Gantt Chart**.
The schedule tasks data is displayed in the Gantt Chart view as shown.



Working With Calendar Views

Calendar views display all the scheduled tasks in a traditional calendar format based on month, week, or day.

The Month view displays the days in standard calendar format.

The Week view displays the tasks of the specified week. The top section displays tasks that span multiple days. The second section displays tasks that are contained within one day. The tasks are displayed vertically, spanning the hours of the day.

The Day view is focused on one 24-hour day.

To view the scheduled tasks in Calendar View:

1. On the **Home** page, click **Tasks**, and then click **Schedule Tasks**.
2. Click the **View Selector** icon and choose **Calendar View**.
The schedule tasks data is displayed in the Calendar view. Use the calendar icons to select Month, Week, or Day. In the Calendar View, you can also see the Day Label in the Day header.

The following image shows the scheduled tasks in a Calendar View for a month.

Schedule Tasks

Search View

Schedule: 4 Selected Year: All Period: All Status: All [Add a Filter](#)

Actions 155 Items

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	31	1 Day -5 Day -5 Day -5	2	3
4 Day -4 Day -4 Day -4	5 Day -3 Day -3 Day -3	6 Day -2 Day -2 Day -2	7 Day -1 Day -1 Day -1	8 Day 0 Day 0 Day 0	9	10
11 Day 1 Day 1 Day 1	12 Day 2 Day 2 Day 2	13 Day 3 Day 3 Day 3	14 Day 4 Day 4 Day 4	15 Day 5 Day 5 Day 5	16	17
18 Day 6 Day 6 Day 6	19 Day 7 Day 7 Day 7	20 Day 8 Day 8 Day 8	21 Day 9 Day 9 Day 9	22 Day 10 Day 10 Day 10	23	24
+16 more	+12 more	+18 more	+27 more	+12 more	+12 more	+12 more
25	26	27	28	29	30	1
+20 more	+36 more	+38 more	+20 more	+12 more		

Saving Views

Saving a view enables you to save your view definition and settings. When you need to display data in the format set by this view, you can use the saved view, instead of again setting the required view properties.

The scope of a saved view is limited to the object on which it is based.

To save a view:

1. Adjust the view to see the data you would like by adjusting filters, columns or sorting on your list. See [Using the Filter Bar to Adjust Your View](#).
2. From **Actions**, click **Save View**.
3. In the Save View dialog, enter a Name (can enter a maximum of 80 characters) and an optional description (can enter a maximum of 255 characters).
4. Click **OK**.

You can see all the saved lists by clicking the **View** drop-down selector.

Editing Saved Views

Edit a saved list view, pivot view, or chart view to modify its name and definition.

Publishing Views

An Administrator or Power User can publish a view to make a private view available to other users. The saved view is duplicated and there is now a private and public version.

Setting a Default View

A Service Administrator or Power User can set a published, saved, view as the default view.

The first time a user opens a view, the default view is displayed. The system then remembers the view settings that were used. So, when you open a view subsequently, it is displayed with the settings that were used most recently.

Exporting List Views and Pivot Views

You can export the records in list views or pivot views to Microsoft Excel.

To export a list view or pivot view:

1. Navigate to the list view or pivot view that must be exported.

2. Click **Actions**, and then **Export to Excel**.

The exported data is stored in an Excel file and can be downloaded. The format of the Excel file is .xls or .xlsx, depending on the **Export to Excel** setting.

Managing Dashboards

Related Topics

- [Overview of Operational Dashboards](#)
- [Viewing and Opening Operational Dashboards](#)
- [Operational Dashboards: Design Mode](#)
- [Creating Operational Dashboards](#)
- [Setting the Object Type Within Operational Dashboards](#)
- [Specifying View Options for Operational Dashboards](#)
- [Editing Operational Dashboards](#)
- [Duplicating Operational Dashboards](#)
- [Deleting Operational Dashboards](#)
- [Exporting Operational Dashboards](#)
- [Importing Operational Dashboards](#)
- [Running Operational Dashboards](#)
- [Displaying Columns for Viewing Operational Dashboards](#)
- [Reordering Columns for Viewing Operational Dashboards](#)
- [Applying Filters to Data Displayed Within Operational Dashboards](#)

Overview of Dashboards

Dashboards provide enhanced reporting capabilities. They enable users to chart, evaluate, and (in some cases) even change key business data.

About Dashboards

Each dashboard can have a maximum of four views. This includes list views, pivot views, or chart views. You can open a maximum of 10 dashboards at a time. Service Administrators, or any user who is granted the Operational Dashboards - Manage role, can create dashboards. The dashboard creator can also control access to the dashboard by granting permissions to one or more users, groups, or teams. Users who have been granted access to a dashboard can run the dashboard and view its data. The access only allows a user to view the dashboard. It doesn't extend their access to the underlying data. Therefore, a user can only view records based on their own access within the service.

Features of Dashboards

Dashboards provide the following features:

- Visualize data interactively with a wide variety of chart types
- Obtain both high-level and detailed insights into the performance of your
- Create filters at the dashboard level and at the individual view level

Filters created at the dashboard level are applied to all the views within the dashboard. After this, filters defined at the view level (if any) are applied.

- Control access to viewing dashboards

Viewing and Opening Dashboards

Viewing Existing Dashboards

To view the dashboards, from **Home**, click **Tasks**, then **Dashboards**.

The Dashboards page appears with the list of existing dashboards.



Opening a Dashboard

To open a dashboard:



1. Access the Dashboards page. This page displays the list of existing dashboards
2. (Optional) Use the **Search** box to search for a particular dashboard.
3. Click the name of the dashboard to open.

The dashboard opens within a new dynamic tab next to the tab.

You can perform the following actions on the dashboard:

- Click any area or total, in any view, to drill down into the individual records that comprise that area or total.
- Edit the dashboard settings using the  icon.
- Refresh all the views in the dashboard using the  icon (at the dashboard level).
- Use filters that were created at the dashboard level. See [Applying Filters to Data Displayed Within Operational Dashboards](#).



On each view in the dashboard, you can:




- Refresh all the views in the dashboard using the  icon (at the dashboard level).
- Expand or collapse views in dashboard views using the  icon.
- Use filters that were defined at the view level. See [Applying Filters to Data Displayed Within Operational Dashboards](#).

Dashboards: Design Mode






The design mode of a dashboard enables you to configure and manage your dashboard and its components (chart views, list views, and pivot views).

At the top-right are these options to manage the dashboard:

-  **Settings**
Edit the properties of the dashboard.
-  **Revert**
Revert changes made to the dashboard properties.

-  **Run**
Run the dashboard.
Dynamically fetches and displays data in the dashboard. Only users who have been granted permissions can view the dashboard's data.
In Run mode, users will see only the **Refresh** and **Expand** options.
-  **Refresh**
Refreshes the data displayed in the dashboard, including all the contained views.
-  **Save**
Saves the changes made to the dashboard properties.

Each view (list, chart, or pivot) within the dashboard contains these options:

-  **Settings**
Edit the properties of the chart, list, or pivot view.
-  **Object Type**
Options are: Tasks and Alerts
-  **View Selector**
Options are: Chart View, List View, or Pivot View.
-  **Expand**
Displays the view in the entire dashboard area.
This option is shown only when a dashboard contains more than one view.
-  **Refresh**
Refreshes the data displayed in the view.

Creating Dashboards

Service Administrators and users who have been granted the Dashboards - Manage application role can create dashboards.

To create a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
The Dashboards page appears, with the list of existing dashboards.
2. Click the **New** icon.
The new dashboard is opened in a new tab. It contains the following:
 - A default name, in the format New Dashboard #.
 - One empty view (list view, pivot view, or chart view)
 - Two sets of icons (at the top-right) that correspond to the options for the dashboard and the view within the dashboard. See [Operational Dashboards: Design Mode](#).
 - A filter for filtering data at the dashboard level. Click **Add a Filter** to add filters.
3. In the set of icons that correspond to the dashboard, click the **Settings** icon.

The Edit Dashboard dialog appears.

4. In the **Properties** tab, specify the required dashboard properties.
See [Defining Operational Dashboard Properties](#).
5. Click the **Access** tab to give access to this dashboard for users, groups, or teams. Users who are granted access can run this dashboard and view its data.
See [Defining Access to Operational Dashboards](#).
6. Click **OK**.
A separate area, with its corresponding icons, is shown for each area specified by the dashboard layout. For example, if you set **Layout** to **Grid**, the page shows four separate areas.
7. For each area within the dashboard, set the object type based on which you want to visualize the data. See [Setting the Object Type Within Operational Dashboards](#).
8. For each area within the dashboard, click the select the **View Selector** icon and specify the type of view. See [Specifying View Options for Operational Dashboards](#).
9. For each view, click **Settings** and specify the settings for that view.
 - See [Creating Chart Views](#).
 - See [Working With List Views](#).
 - See [Working with Pivot Views](#).
10. Click **Save** to save the dashboard settings.

Defining Dashboard Properties

Dashboard properties include name, description, borders, background, and layout.

To define a dashboard's properties:

1. Open the **Properties** tab of the Edit Dashboard dialog.
2. In **Name**, enter a unique name for the dashboard.
3. In **Description**, enter an optional description for the dashboard.
4. Select **Borders** to display borders around each view in the dashboard.
5. Select **Global Filter Bar** to include a global filter bar in the dashboard. This filter bar is applicable to all the views within the dashboard.
6. Select **Show Filter Bars** to display the view-level filters when you run the dashboard.
7. In **Background**, select one of the following:
 - No Fill
 - Solid: Select the color that must be used as the background color. Optionally, select **Gradient**, and then select a color.
8. In **Layout**, specify the number of regions (one for each view) into which the dashboard is divided. The maximum number of regions is four.

Select one of the following:

- Single
Displays a single view
- Horizontal
Displays two views, one below the other

Use **Horizontal Split** to specify how the screen area is split between the two views.

- Vertical
Displays two views, one beside the other

Use **Vertical Split** to specify how the screen area is split between the two views. For example, if you set **Vertical Split** to 30, the chart displayed at the top of the dashboard uses 30% of the dashboard space. The second chart uses the remaining 70% of the dashboard.

- Grid
Displays four views in the dashboard
9. Click **OK** to save the dashboard settings.

Defining Access to Dashboards

Service Administrators and users who have been granted the role can grant access to this dashboard for specific users, groups, or teams. Such users can run the dashboard and view its data.

To add access for running a dashboard:

1. Open the **Access** tab of the Edit Dashboard dialog.
By default, there is one entry for the user who created the dashboard.
2. Click the **Add** icon.
The **Select User** dialog is displayed.
3. Click the **Select User** icon, and select one of the following: **Users**, **Groups**, or **Teams**.
The default selection is **Users**.
4. Enter the name or description and click **Search**.
 - You can click **Search** to display the entire list of available users, groups, or teams. For example, if you don't know the name of a group, select Group using the **Select User** icon and then click **Search**. The list of available groups is displayed.
 - When selecting users, click **Advanced** to display the **User ID** and **Email** fields. You can also use these attributes while searching for users.
5. Double-click the username, group name, or team name to provide access.
The selected name appears on the **Access** tab. You can click this name to view the details.
6. Click **OK** to save the dashboard settings.

Note:

Service Administrators and users who have been granted the application role can view and edit all dashboards.

To remove access for running a dashboard:

1. Open the **Access** tab of the Edit Dashboard dialog for the dashboard whose access is being set.
The users, groups, and teams who have been granted permissions to run the dashboard are listed under **Name**.

2. Click the name of the user, group, or team for whom permissions to run the dashboard must be revoked.
To select multiple items, press and hold the **Ctrl** key and then select the required items.
3. Click and then **OK**.

Setting the Object Type Within Dashboards

After setting the properties and access for the dashboard, you can select the data type to report on or visualize for each view.

All the data, metadata, filters, and so on in the view will be based on this object type. Each view can have only one object type, but it may vary between views.

In Planning, these object types are available:

- Tasks
- Alerts

To specify the object type:

1. Open an operational dashboard from the Operational Dashboard page.
2. Click the **Object** icon and select the required object.
3. Click **Save** to save the settings.

If you change the object type, all the settings in the region will be reset.

Specifying View Options for Dashboards

Within a dashboard, after specifying the object type, you can select the view such as List View, Pivot View, or Chart View to display the data within the dashboard.

To specify the view option:

1. On the Dashboards page, open the dashboard for which you want to specify the view options.
2. Click the **View Selector** icon and choose any of the following:
 - List View
 - Pivot View
 - Chart View
3. Click the **Settings** icon corresponding to the **View Selector** icon and specify the view options.
 - For List Views, see [Working With List Views](#).
 - For Pivot Views, see [Working with Pivot Views](#).
 - For Chart Views, see [Creating Chart Views](#).

The data is displayed within the dashboard based on the specified view settings.

4. Click **Save**.

Editing Dashboards

Service Administrators can edit a dashboard and modify its properties and access permissions.

To edit a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
2. Click the dashboard that you want to edit and then click the **Edit** icon or you can click the **Actions** icon and then click **Edit**.
The Dashboard Designer appears.

Additionally, if you're viewing the dashboard in run mode, you can click the **Edit** icon to switch to design mode.
3. Click **Settings** to display the Edit Dashboard dialog.
4. Modify the required properties using the **Properties** and **Access** tabs.
See [Defining Operational Dashboard Properties](#) and [Defining Access to Operational Dashboards](#).
5. Click **OK**.

Duplicating Dashboards

To duplicate a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
2. Select the dashboard that you want to duplicate and then click the **Duplicate** icon. You can also click the **Actions** icon and then click **Duplicate**.
The Copy of <Dashboard name> tab opens in the Dashboard Designer.
3. Specify the properties, access, and view options.
4. Click **Save** to save the dashboard.

Deleting Dashboards

To delete a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
2. Click the dashboard that you want to delete and then click the **Delete** icon. You can also click the **Actions** icon and then click **Delete**.

A message is displayed asking for confirmation.
3. Click **Yes**.

The dashboard is deleted and no longer appears on the Dashboard page.

Exporting Dashboards

You can export dashboard definitions to an XML file. Using the export functionality, you can copy a dashboard definition from one business process to another.

To export a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
The Dashboards page is displayed.
2. Select one or more dashboards that you want to export and then click the **Export** icon.
The Export Dashboards dialog is displayed.
3. Select one of the following:

- **All Rows:** Export all existing operational dashboards
 - **Selected Rows:** Export the dashboards that you had selected in the previous step.
4. Click **Export**.
The specified dashboards are exported as a JSON file, with the name *Dashboard.json*.

Importing Dashboards

Service Administrators can import dashboards that were previously exported using the **Export** option

To import a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
The Dashboards page is displayed.
2. Click **Import**.
The Import Dashboards dialog is displayed.
3. In **File**, click **Browse** and specify the JSON file that contains the dashboard that you want to import..
4. Click **Import**.
The **Status** field displays the status of the import.
5. If the import completed successfully, click **OK**.

The imported dashboard is displayed in the Dashboards page.

If the import file contains dashboards that have the same name as those in the Dashboards page, then these dashboards are updated.

Running Dashboards

Users can run dashboards for which they have been granted access.

When a dashboard is run, the latest data is displayed in the various charts and pivot views in the dashboard.

To run a dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
The Dashboards page is displayed.
2. Do one of the following:
 - Click the dashboard you want to run and then click the **Run** icon.
 - Click the **Actions** icon for the dashboard you want to run and select **Run**.
 - Open a dashboard and click the **Run** icon.
The dashboard is displayed in runtime mode in a new tab with the latest data.
3. If required, filter the displayed data. See [Applying Filters to Data Displayed Within Operational Dashboards](#).

Displaying Columns for Viewing Dashboards

To display the columns to view the dashboards:

1. On the Dashboard page, click **View** and then **Columns**.
2. Click **Show All** to display all the columns or select specific columns.

To show or hide displayed columns:





1. Click **View > Columns > Manage Columns**.
2. Move the required columns between **Hidden Columns** and **Visible Columns** using the move icons to show or hide the displayed columns.

Reordering Columns for Viewing Dashboards

You can reorder columns to display them in a different order.

To reorder columns:

1. On the Dashboard page, click **View** and then click **Reorder Columns**.
2. Select the column name that you want to reorder and use the following icons to move it to the required position:

- : Move selected items to top of the list
- : Move selected items up one in the list
- : Move selected items down one in the list
- : Move selected items to bottom of the list

3. Click **OK**.
The columns are displayed based on the specified order.

Copying a URL for Operational Dashboards

You can copy a URL for an operation dashboard to enable access to the dashboard.

To copy a URL for an operational dashboard:

1. From **Home**, click **Tasks**, then **Dashboards**.
The Dashboards page is displayed.
2. Click the **Actions** icon for the dashboard to copy the URL, and then click **Copy URL**.
3. Copy the displayed URL. The URL will enable direct access to the dashboard.

Applying Filters to Data Displayed Within Dashboards

You can use filters to restrict the data displayed in a dashboard and its views.

Use the **Show/Hide** toggle icon next to the **Search** box to display or hide the filter bar.

In the Filter bar, you can do the following to filter the displayed dashboards:

- Add additional filters
- Specify the condition for each filter
- Clear or Remove a filter
- Clear All Filters

To restrict data displayed in a dashboard:

1. Run the dashboard and display its data.
2. If a global filter was configured for this dashboard, use this to filter data displayed in all the views in the dashboard.
3. For any view, use the filter defined on a view to filter data displayed in that view.

The global filter is first applied to all the views in the dashboard. Then, for each view, the filter defined for that view is applied.

For more information about each of these features, see [Working with Filters](#).

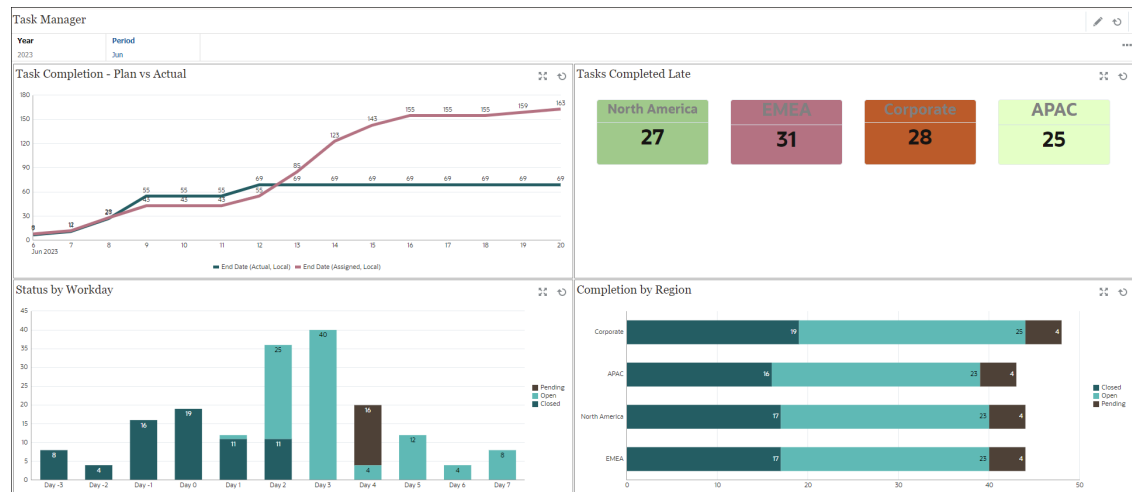
Example: Task Manager Operational Dashboard

This example shows how to create a dashboard.

The dashboard uses these views for Task Manager:

- [Chart View: Task Completion - Plan vs Actual](#)
- [Chart View: Tasks Completed Late](#)
- [Chart View: Status by Workday](#)
- [Chart View: Completion by Region](#)

The completed dashboard is shown in the screenshot. You can click any area in any view to drill down into the individual records that comprise that area.



In this example, to create the dashboard:

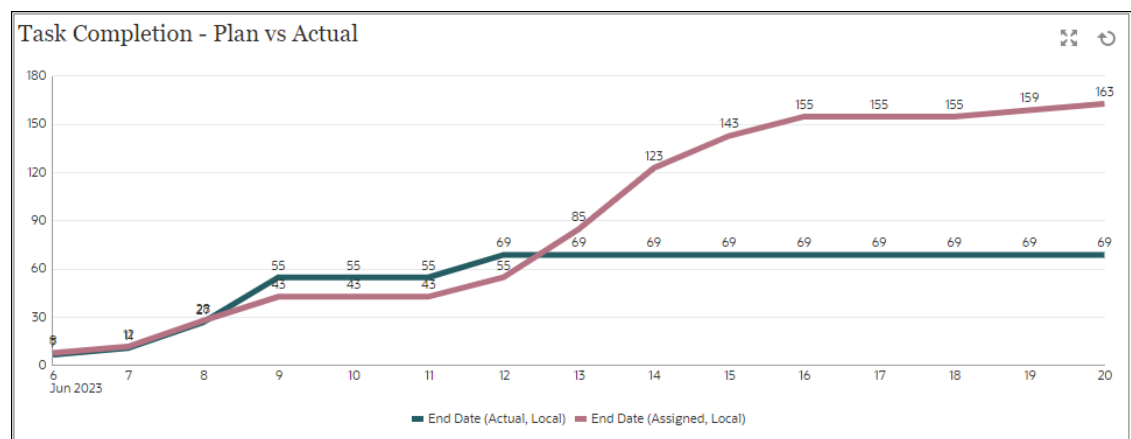
1. From **Home**, select **Tasks**, and then click **Operational Dashboard**.
The existing operational dashboards are displayed.
2. Click the **New** icon to create a new dashboard.
A new dashboard is created with a default name and is opened in a new tab.
3. Click the **Settings** icon for the dashboard and update the properties on the **Properties** tab:
 - **Name:** Task Manager
 - **Borders:** Select this checkbox
 - **Global Filter Bar:** Select this checkbox
 - **Background:** No fill

- **Layout:**
 - **Grid:** Select this check box.
 - **Horizontal Split:** 50
 - **Vertical Split:** 50
- 4. To create the chart view on the top left, see [Chart View: Task Completion - Plan vs Actual](#).
- 5. To create the chart view on the top right, see [Chart View: Tasks Completed Late](#).
- 6. To create the chart view on the bottom left, see [Chart View: Status by Workday](#).
- 7. To create the chart view on the bottom right, see [Chart View: Completion by Region](#).
- 8. Click **Save** to save the dashboard.

Chart View: Task Completion - Plan vs Actual

This example shows task completion over time, allowing you to see if your tasks are running ahead or behind schedule.

The chart includes all of the task end dates that fall on or before a certain date. It also shows the status of completing those tasks.



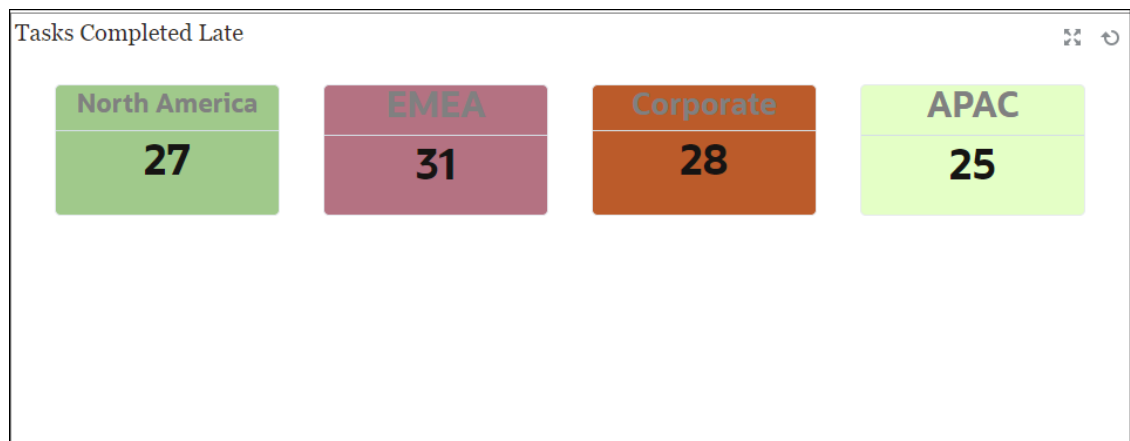
Within the dashboard, top left view:

1. Click the **Object Type** icon and select **Tasks**.
2. Click the **View Selector** icon and select **Chart View**.
3. Click the **Settings** icon and specify the following:
 - On the **Properties** tab:
 - **Title:** Task Completion - Plan vs Actual
 - **Type:** Line
 - **Background:** No fill
 - **Label Position:** Above Point
 - **Line Weight:** 5
 - **Grid Lines:** Select this check box
 - **Period:** Selection
 - On the **Layout** tab:
 - **X-Axis:**

- * **Type:** Date
 - * **Sort:** X-Axis from the first drop-down menu and Descending from the second drop-down menu
 - **Legend (Series):**
 - * First row, add:
 - * **Value:** Task
 - * **Aggregation:** Count
 - * **Categories:** None
 - * **Group By:** End Date (Actual , Local)
 - * **Date Aggregation:** On or Before
 - * Click **New** and add another row. Specify the following:
 - * **Value:** Task
 - * **Aggregation:** Count
 - * **Categories:** None
 - * **Group By:** End Date (Assigned, Local)
 - * **Date Aggregation:** On or Before
 - On the **Axis** tab:
 - Select **X Axis**.
 - Interval : Daily
 - **Minimum:** Auto
 - **Maximum:** Auto
 - On the **Legend** tab:
 - **Legend Position:** Bottom
 - **Palette:** Redwood
 - Select the default labels for each series: **End Date (Actual , Local)** and **End Date (Assigned, Local)**
 - Select the default colors for each series.
4. Click **OK**.

Chart View: Tasks Completed Late

This example shows the tasks completed behind schedule in various organizational units.



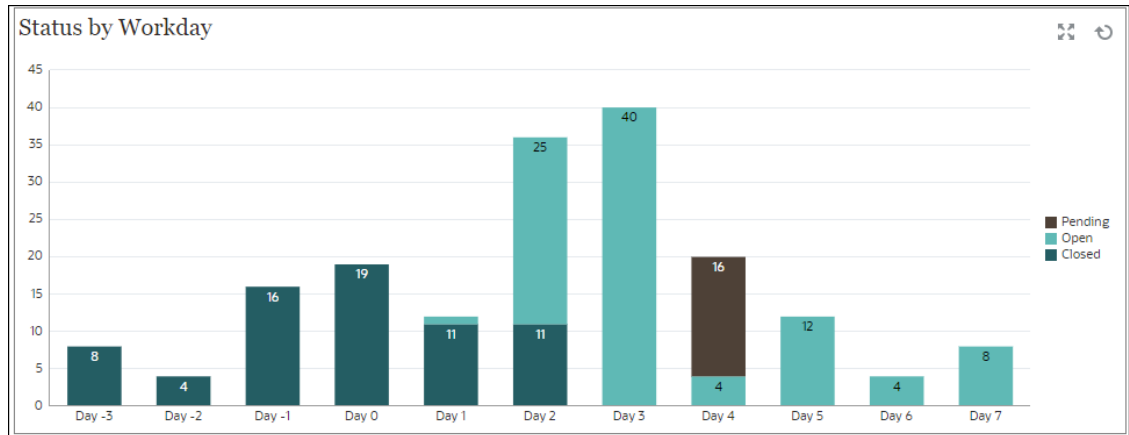
Within the dashboard, top left view:

1. Click the **Object Type** icon and select **Tasks**.
2. Click the **View Selector** icon and select **Chart View**.
3. Click the **Settings** icon and specify the following:
 - On the **Properties** tab:
 - **Title:** Tasks Completed Late
 - **Type:** Bar
 - **Background:** No fill
 - **Label Position:** Inside Edge
 - **Orientation:** Vertical
 - **Period:** Selection
 - On the **Layout** tab:
 - **X-Axis:**
 - * **Type:** Date
 - * **Sort:** X-Axis from the first drop-down menu and **Ascending** from the second drop-down menu
 - **Legend (Series):**
 - * **Value:** Task
 - * **Aggregation:** Count
 - * **Categories:** Organizational Unit
 - * **Filter:** Ever Been Late (Assignee) does not equal No
 - On the **Axis** tab, select the default options for X axis.
 - On the **Legend** tab, select the default options.
4. Click **OK**.

Chart View: Status by Workday

This example chart shows task completion based on a custom Workday attribute.

In this example, the custom attribute was added previously and defined with values for days -15 through 35. All tasks were then assigned a work day based on their planned completion.



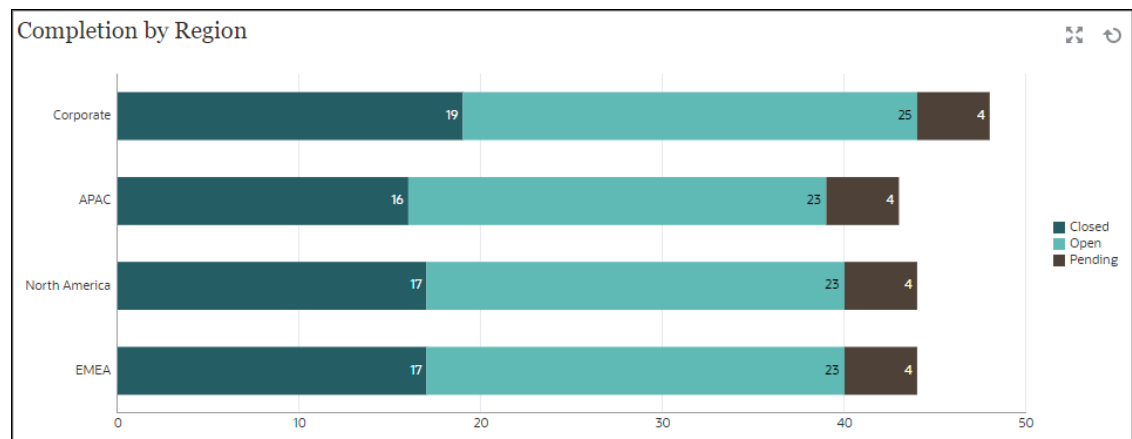
Within the dashboard, bottom left view:

1. Click the **Object Type** icon and select **Tasks**.
2. Click the **View Selector** icon and select **Chart View**.
3. Click the **Settings** icon and specify the following:
 - On the **Properties** tab:
 - **Title:** Status by Workday
 - **Type:** Column
 - **Background:** No fill
 - **Label Position:** Inside Edge
 - **Orientation:** Vertical
 - **Grid Lines:** Select this check box
 - **Period:** Selection
 - On the **Layout** tab:
 - **X-Axis:**
 - * **Type:** Attribute
 - * **Attribute 1:** Workday (This custom attribute must have been added previously for it to display in the list.)
 - * **Sort:** Workday from the first drop-down menu and Ascending from the second drop-down menu.
 - **Legend (Series):** In first row, add:
 - * **Value:** Task
 - * **Aggregation:** Count
 - * **Categories:** Status
 - **Y Axis:** Select this check box.
 - **Minimum:** Auto
 - **Maximum:** Auto
 - **Major Unit:** Auto

- **Minor Unit:** Auto
- On the **Legend** tab:
 - **Legend Position:** Right
 - **Palette:** Redwood
 - Select the default labels for each series: **Closed, Error, Open, and Pending.**
 - Select the default colors for each series.
- 4. Click **OK**.

Chart View: Completion by Region

This example chart shows task completion based on region. In this example, the custom Organizational Unit attribute was added previously and defined with values for tasks completed based on the region.



Within the dashboard, bottom left view:

1. Click the **Object Type** icon and select **Tasks**.
2. Click the **View Selector** icon and select **Chart View**.
3. Click the **Settings** icon and specify the following:
 - On the **Properties** tab:
 - **Title:** Completion by Region
 - **Type:** Column
 - **Background:** No fill
 - **Label Position:** Inside Edge
 - **Orientation:** Horizontal
 - **Grid Lines:** Select this check box
 - **Period:** Selection
 - On the **Layout** tab:
 - **X-Axis:**
 - * **Type:** Attribute
 - * **Attribute 1:** Organizational Unit

(This custom attribute must have been added previously for it to display in the list.)

- * **Sort:** Organizational Unit from the first drop-down menu and Descending from the second drop-down menu.
 - **Legend (Series):**
 - * **Value:** Task
 - * **Aggregation:** Count
 - * **Categories:** Status
 - On the **Axis** tab:
 - **Y Axis:** Select this check box.
 - **Minimum:** Auto
 - **Maximum:** Auto
 - **Major Unit:** Auto
 - **Minor Unit:** Auto
 - On the **Legend** tab:
 - **Legend Position:** Right
 - **Palette:** Redwood
 - Select the default labels for each series: **Closed**, **Error**, **Open**, and **Pending**.
 - Select the default colors for each series.
4. Click **OK**.

13

Designing Dashboards

Design dashboards that show summary data to users. Dashboards enable users to chart, evaluate, highlight, comment on, and even change key business data, as well as add and edit rules.

Related Topics

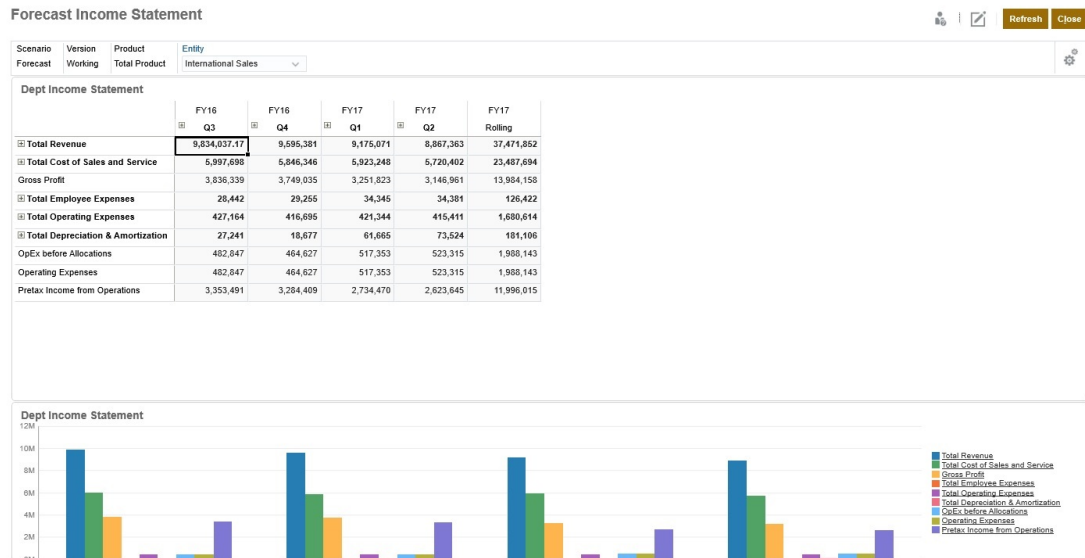
- [The Power of Dashboards](#)
- [Creating and Managing Dashboards](#)
- [About Dashboard Versions](#)
- [Viewing Dashboards](#)
- [Converting Dashboard 1.0 Dashboards to 2.0](#)
Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.
- [Creating and Managing Dashboards 1.0](#)
- [Concepts in Designing 1.0 Dashboards](#)
- [Creating Dashboard 1.0 Dashboards](#)
- [Creating Dashboards Containing Master Forms and Details](#)
- [About Your Dashboard's Layout - Version 1.0](#)
- [About the Gauge Chart Type](#)
- [About the Tile Chart Type](#)
- [Customizing Dashboard Colors](#)
- [About Global and Local POVs in 1.0 Dashboards](#)
- [Dashboard POVs and Valid Intersections](#)
- [Creating and Managing Dashboards 2.0](#)
- [Concepts in Designing Dashboard 2.0 Dashboards](#)
- [Object Palette](#)
- [Dashboard Toolbar](#)
- [Dashboard Workspace](#)
- [Properties Panel](#)
- [Dashboard Components](#)
- [Considerations for Dashboard 2.0](#)
- [Creating Dashboard 2.0 Dashboards](#)
- [Working with the Member Selector When Designing Dashboards 2.0](#)
When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.
- [About Forms 2.0 Grids in Dashboard 2.0](#)
- [About the Geomap Chart Type](#)

- About the Pyramid Chart Type
- About the Waterfall Chart Type
- Using Tables in Dashboards
- About the Gauge Chart Type for Dashboard 2.0
- About the Radar Chart Type for Dashboard 2.0
- About the Combination Chart Type for Dashboard 2.0
- About the Tile Chart Type for Dashboard 2.0
- About Global and Local POVs in Dashboard 2.0
- About Quick Analysis

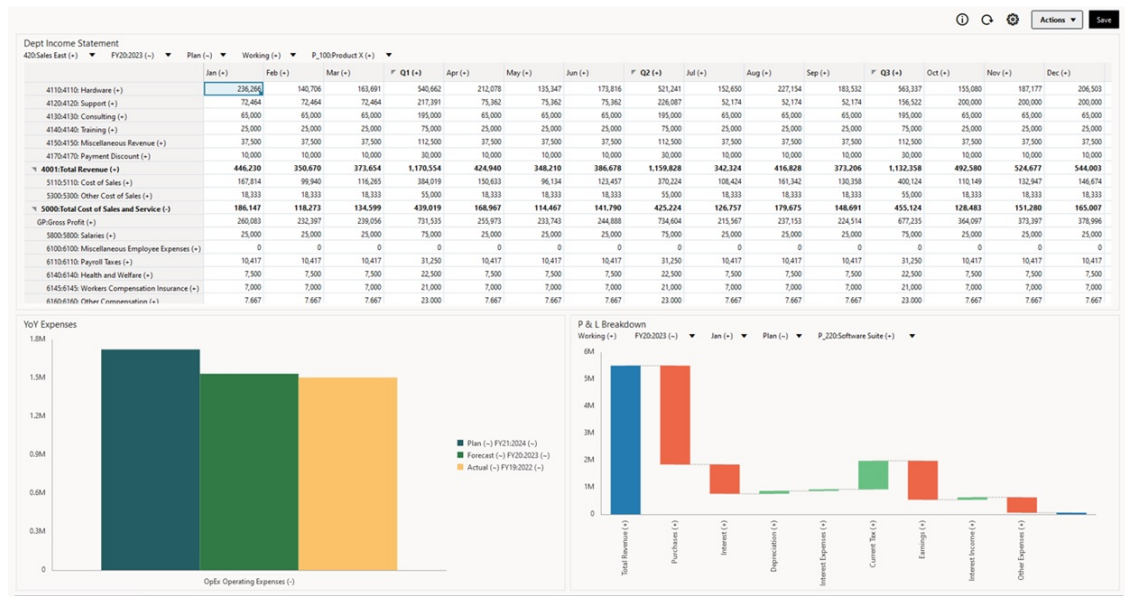
The Power of Dashboards

Dashboards typically provide an overview to users at the beginning of their planning and forecast process by showing summary data. The versatility of dashboards enables users to chart, evaluate, highlight, comment on, and even change key business data. They can change a driver in a form that's in a dashboard and immediately see its impact in other forms and charts:

Sample Dashboard 1.0



Sample Dashboard 2.0



You create dashboards by simply dragging and dropping a variety of objects from the library panel on the left to the dashboard workspace.

With dashboards, you can:

- Include multiple forms that dynamically update, including their associated charts, as users change data in the form.
- Include tiles that display a specific value from the cube. To provide the value for each tile, you can specify a form or a cell intersection as a data source.
- Switch easily between using the design environment and the runtime environment, so you can see exactly what the dashboard user will see.
- Depict data interactively with a wide variety of chart types such as area, bar, bubble, column, combination bar and line, doughnut, funnel, gauge, scatter, radar, and so on.
- Control the dashboard's layout.
- Depending on the form design, enable users to drill down into underlying detail and select which members to work with.
- Include user variables in the global POV bar and the local POV.
- In certain charts, customize the colors and line width, and show or hide gridlines.
- Add links to dynamically display external Web pages.
- Include explanations of data called *Commentary* in the dashboard.
- Tag a form as master and then filter members from the master form to detail forms or charts within the same dashboard.
- Change legend and label positions in charts.
- In Dashboard 2.0 (only available with Redwood Experience):
 - Add up to 12 components within a dashboard
 - Add up to 10 tiles in a tile chart type
 - Add hierarchical labels in charts

- Use a logarithmic scale in relevant chart types
- Add a secondary Y-axis in relevant chart types
- Render the dashboard in Default, Light, and Dark background colors using the Style property
- Use grid display with write-enabled grids (used with Forms 2.0)
- Enjoy other usability improvements such as more screen space, options to open and edit a form directly, option to edit a dashboard without data, automatically apply POV changes, and hide dimension names
- Improved Rules on Save with dashboards: with/without runtime prompts before/after Load/Save
- Migrate easily from Dashboards 1.0





Note:

Dashboard 1.0 dashboards are deployed with Forms 1.0, even when the **Forms Version** setting is **Forms 2.0**.

When users use a dashboard (referred to as *runtime*), they can set many aspects of the components, such as the type of chart displayed, the dashboard's title, and so on. A toolbar is available for each component. Dashboard users can change and save data, run rules, and so on. However, changes made in runtime to the chart type options aren't saved for the next session. Clicking **Save** in runtime saves the data, but not the dashboard definition.

Service Administrators create, redesign, delete, and assign permissions to dashboards and dashboard folders.

Videos

Your Goal	Watch This Video
Learn how to create 1.0 dashboards.	 Creating Dashboards in Oracle Planning and Budgeting Cloud
Learn how to create Dashboard 2.0 dashboards.	 Designing Dashboards 2.0 in EPM Cloud Planning

Related Topics

- [About Dashboard Versions](#)
- [Concepts in Designing 1.0 Dashboards](#)
- [Concepts in Designing Dashboard 2.0 Dashboards](#)
- [Creating and Managing Dashboards](#)

Creating and Managing Dashboards

Related Topics

- [About Dashboard Versions](#)

- [Viewing Dashboards](#)
- [Converting Dashboard 1.0 Dashboards to 2.0](#)
Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.



About Dashboard Versions

Dashboards are currently available in two versions:

- **Dashboard 1.0:** Uses Oracle Application Development Framework (Oracle ADF) technology
- **Dashboard 2.0:** Uses Oracle JavaScript Extension Toolkit (Oracle JET) technology

Both dashboard versions currently coexist in the same business process at the same time. Dashboard 1.0 uses Oracle ADF technology and the behavior of the Oracle ADF-based dashboards remains unchanged. You can still create and update these dashboards in your business process as you did before. Dashboard 2.0 uses the existing Dashboard functionality and enhances it with Oracle JET technology for faster rendering, sophistication, ease of use, improved flexibility, better visualization, and additional designs. Dashboard 2.0 is available only if **Redwood Experience** is enabled.

To help you differentiate between the dashboard versions on the **Dashboards** listing page, we've provided an icon in front of each dashboard:

-  : Dashboard 1.0
See [Creating and Managing Dashboards 1.0](#).
-  : Dashboard 2.0
See [Creating and Managing Dashboards 2.0](#).

Dashboard 2.0 Designer Features

Dashboard 2.0 Designer supports:

- More chart types than Dashboard 1.0; for example, Waterfall, Pyramid, and Geomap and sub-chart types for Radar, Combination, and Gauge charts are all Dashboard 2.0 features
- Creating tables in dashboards with visual inline views of data, called Spark Charts
- Quick Analysis, which lets you add components to dashboards without having a prebuilt form

You create an ad hoc query by typing member names in the Search bar or using the Member Selector, and then you control the layout of the query in the Layout tab of the Properties panel.

- Working directly with data in form grids if the underlying form is a Forms 2.0 form
- A URL type of dashboard component
- A Commentary type of dashboard component with a text editor
- A custom formatted dashboard title
- Background colors for URL, Commentary, and Grid component types
- Grid chart type option to render Forms 2.0 inside Dashboards 2.0

- A new **Associations** tab in the Properties panel for associating global rules
- Multiple charts for Gauge, Pie, and Donut chart types
- New menu options for directly opening and editing forms from within dashboard components
- An Information icon for forms and dashboards. Drop any form into a dashboard and see its information.
- The ability to resize the Properties panel
- The ability to set the background color for each dashboard component
- An option to remove the component title, using the saved space for visualizations
- An increased number of dashboard components (up to 12)
- An increased number of tiles (up to 10)
- The ability to edit without data
- A customized cell visualization limit of up to 10,000 cells with any row x column combination, such as:
 - 100 rows x 100 columns=10,000 cells
 - 1000 rows x 10 columns=10,000 cells
 - 250 rows x 40 columns= 10,000 cells
- The ability to select a dashboard **Style**. Options are **Default**, **Light**, and **Dark**.
- Options to show and hide borders between dashboard components and POV bars
- The new Oracle JET member selector
- A surface Designer in Dynamic Tabs

To review considerations before switching to Dashboard 2.0, see [Considerations for Dashboard 2.0](#).

Viewing Dashboards

To view the **Dashboards** page:

1. On the Home page, click **Dashboards**.
2. To open a dashboard, click the dashboard's name.

This opens the dashboard in the *runtime* environment.

Note:

If you've selected a Dashboard 2.0 dashboard and you see an `Error` during `Dashboard 2.0 component initialization` message, the dashboard has Forms 2.0 forms associated with it. You must ensure that Redwood Experience and Forms 2.0 are enabled before you can view the dashboard.

To enable Redwood Experience, click **Tools**, then **Appearance**, select **Enable Redwood Experience**, and then click **Save**.

To enable Forms 2.0, click **Application**, then **Settings**, and then under **Other Options**, find **Forms Versions**, select **Forms 2.0**, and then click **Save**.

Features of the Dashboards Page

On the **Dashboards** page:

- Folders are supported. The **Dashboards** page uses the same folder hierarchy as infolets and data entry forms and all artifacts and folders reside under a root folder called **Library**. You cannot delete or rename the **Library** folder.

Note:


Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

- To help you differentiate between the dashboard versions on the **Dashboards** page, we've provided an icon in front of each dashboard:



- You can toggle between viewing dashboards by a flat view or a tree view:



- The **Dashboards** page can be filtered by type. Click , and then select from the following filter options:

- **All Types** (default)
- **Dashboard 1.0**
- **Dashboard 2.0**

- To search for a specific dashboard, click



to search by keywords or  to narrow the search to specific library folders.

Dashboards Page Actions Column

On the right side of the **Dashboards** page there is an **Actions** column. Clicking on the **...** icon next to the dashboard or folder, displays the following actions:

- Folder Actions:
 - **Assign Permission:** Assigns access permissions to the folder. Folder permissions apply to all items within that folder, even to items that may not be visible in the list.
 - **Create Dashboard:** Creates a Dashboard 1.0 dashboard.
 - **Create Dashboard 2.0:** Creates a Dashboard 2.0 dashboard.
 - **Create Folder:** Creates a new folder.

- **Delete:** Deletes a folder. The folder must be empty to delete it.
- **Rename:** Renames a folder. The folder cannot be renamed if it contains other folders.
- **Move to:** Moves the folder to another location in the folder hierarchy.
- **Convert All Dashboards to 2.0:** Finds any Dashboard 1.0 dashboards within the folder hierarchy, and converts them to Dashboard 2.0 dashboards.
- Individual Dashboard Actions:
 - **Edit:** Opens the dashboard in the Dashboard Designer with the underlying form data. The dashboard opens in a dynamic tab.
 - **Edit without Data** (Dashboard 2.0 option only): Opens the dashboard in the Dashboard Designer without the underlying form data so you can more easily perform such actions as realigning the dashboard components and tiles. The dashboard opens in a dynamic tab.
 - **Rename:** Renames a dashboard.
 - **Copy As:** Copies a dashboard with a new name. The dashboard is copied to the listing directly under the original dashboard.
 - **Delete:** Deletes a dashboard.
 - **Move to:** Moves a dashboard to another folder.
 - **Assign Permission:** Assigns access permissions to the dashboard.
 - **Convert to Dashboards 2.0** (Dashboard 1.0 option only): Converts the dashboard to a Dashboard 2.0 dashboard.
 - **Copy URL:** Enables you to copy and share the direct URL for a dashboard. See [Copying Direct URLs for Artifacts](#).

Converting Dashboard 1.0 Dashboards to 2.0

Learn how to convert Dashboard 1.0 dashboards to Dashboard 2.0 dashboards.

If your application currently uses Dashboard 1.0, you can convert them to Dashboard 2.0.

You convert dashboards on the **Dashboards** listing page at the individual dashboard level or at the folder level. For example, if you wish to convert all dashboards in the application from 1.0 to 2.0, you can select the top level Library folder and convert them all.

Note:

- After converting to Dashboard 2.0, you cannot convert your dashboards back to Dashboard 1.0.
- The conversion process does not change the dashboard names. Navigation flows will still work as they did before the conversion.
- After converting to Dashboard 2.0, dynamic POVs are displayed first instead of fixed POVs.

To convert Dashboard 1.0 to Dashboard 2.0:

1. On the Home page, click **Dashboards**.

2. Navigate to the folder or to the individual Dashboard 1.0 dashboard that you'd like to convert, then select from the following options:
 - To convert an individual dashboard, click **•••** to the right of the dashboard, and then select **Convert to Dashboards 2.0**.
 - To convert all dashboards within a folder, click **•••** to the right of the folder, and then select **Convert All Dashboards to 2.0**.

 **Note:**

- Very old dashboards might include a dashboard definition with a component width value that is no longer supported. This could result in an unexpected dashboard rendering after converting an old dashboard to Dashboard 2.0.
To resolve this issue, we recommend any of the following workarounds:
 - Open the original dashboard in Dashboard (1.0), edit the dashboard, and then save it. The dashboard will be automatically saved with the corrected component width values, and then it can be converted to Dashboard 2.0.
 - Create a new dashboard in Dashboard (1.0) with the same set of forms and charts and the same settings, then convert the dashboard to Dashboard 2.0.
 - Create a new dashboard in Dashboard 2.0 with the same artifacts and settings.
- Dashboards containing master forms and details that were converted to Dashboard 2.0 prior to the 23.11 update might display two **Apply Context** menu options in a grid's context menu. This issue was fixed in 23.11.

Creating and Managing Dashboards 1.0


- [Concepts in Designing 1.0 Dashboards](#)
- [Creating Dashboard 1.0 Dashboards](#)
- [Creating Dashboards Containing Master Forms and Details](#)
- [About Your Dashboard's Layout - Version 1.0](#)
- [About the Gauge Chart Type](#)
- [About the Tile Chart Type](#)
- [Customizing Dashboard Colors](#)
- [About Global and Local POVs in 1.0 Dashboards](#)
- [Dashboard POVs and Valid Intersections](#)

Concepts in Designing 1.0 Dashboards

Helpful information as you design 1.0 dashboards:



- On the left is the design palette. Simply drag and drop objects from the palette to the canvas.

 **Tip:**

Drag an object to a border line. The drag icon changes to a plus sign when you can drop the object in an allowed space. See [About Your Dashboard's Layout - Version 1.0](#).

- On the top right are settings for the entire dashboard:



- Click **Settings**




to set these general aspects of the dashboard:

Table 13-1 Dashboard General Settings



Option	Description
Use name as title	By default, this option is selected. Clear this option to give the dashboard a title with custom formatting.
Borders	When you create a new dashboard, borders are hidden by default. To show borders in newly-created dashboards, select Show .
Layout	Select Fixed (default) or Flexible .
POV Bars	Select Show (default) or Hide .
Global POV Bar	Select Enable (default) or Disable .

For information about POVs, see [About Global and Local POVs in 1.0 Dashboards](#).

- When you hover over a dashboard object, a toolbar for that object displays in the upper right corner: 



 **Note:**


Dashboard (1.0) hover icons provide options such as **Instructions** (available only if instructions are configured for a form), **Actions**, **Save**, **Refresh**, **Settings**, and **Maximize**, depending on the type of object.

- As you create a dashboard, click **Runtime**  so that you can immediately see how the dashboard looks and works to a dashboard user. To return to designer mode to continue designing the dashboard, click .
- By default, missing or suppressed data is plotted as zeros in graphs. You can clear the **Plot Missing Values as Zero** setting to ignore missing or suppressed data in certain chart types so it's no longer plotted as zeros.
- The listing page for dashboards supports folders. Folders enable you to assign permissions to all dashboards within a folder rather than assigning permissions to each individual dashboard. The dashboard listing page uses the same folder hierarchy as infolets and data entry forms and all artifacts and folders reside under a root folder called **Library**.

 **Note:**

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

- On the listing page for dashboards, you can toggle between viewing dashboards by a flat view or a tree view:  

Then you can search for dashboards using **Search** . The flat view displays only the dashboards that meet the search criteria, not the folders that contain them. The tree (or hierarchical) view displays dashboards in the context of the folders that contain them.

To search on another keyword, clear the search criteria by clicking  in the **Search** box.

Creating Dashboard 1.0 Dashboards

Need help deciding which dashboard version to choose? See [About Dashboard Versions](#).

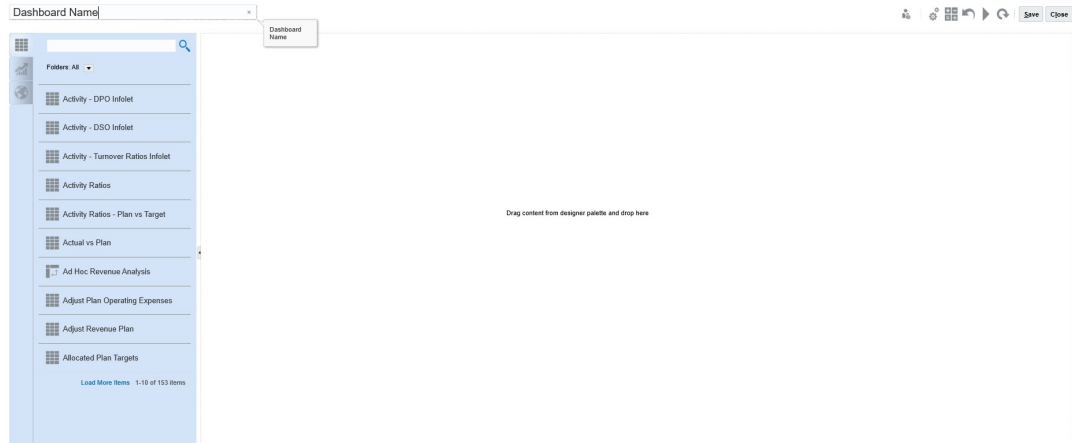
 **Note:**

To create a Dashboard 2.0 dashboard, see [Creating Dashboard 2.0 Dashboards](#).

1. From the Home page, click **Dashboards**, and then click **Create**.



- From the options provided, select **Dashboard**.



- Enter a name by clicking the default dashboard name and entering a new name in the input box.

You can give the dashboard a title with custom formatting, click **Settings**, clear **Use name as title**, and then enter the title and set formatting the dialog box.

- From the design palette on the left, drag and drop objects onto the dashboard canvas. Select from these objects:

Table 13-2 Dashboard Objects


Object	Description
Forms	<p>Select forms to include in the dashboard by navigating to the forms folders or by searching for them by name. To view instructions for forms after they've been added to the dashboard, hover over the form and click Instructions</p> <p></p> <p>The access permissions set for forms are honored in dashboards.</p>

Table 13-2 (Cont.) Dashboard Objects

Object	Description
Chart Types	<p>Select the chart types to include in the dashboard. When first added, a selected chart has sample data. You then associate it with a form as its data source. When you link a chart to a form, users can immediately see the impact of changing data in the form on the associated charts.</p> <p>By default, missing or suppressed data is plotted as zeros. For selected chart types (Area, Bubble, Combination, Line, Radar, and Scatter), you can disable this setting by clearing the Plot Missing Values as Zero option in the chart's settings. When this option is cleared, the missing or suppressed data is ignored and is no longer plotted for those chart types.</p> <p>The Combination chart type alternates displaying row data with vertical bars and lines in the chart. For example, the data in row 1 of a form is displayed as a bar and the data in row 2 as a line, with alternating chart types for even and odd-numbered rows. Although the Combination chart type can display up to 20 rows of data, it's particularly useful when you want to compare two categories of data. For example, you want to compare Germany and France's average exchange rates over several years, so the form has Germany rates in row 1 of the form, and France's rates are in row 2.</p> <p>For information on the Gauge chart type, see About the Gauge Chart Type.</p> <p>The Tile chart type, sometimes called <i>performance tiles</i>, lets you select specific values from the cube to display. See About the Tile Chart Type.</p>
Commentary	Select External Artifacts , and then Commentary . Enter text that explains the data or charts. Note that the text limit is 2000 characters, including any formatting tags that are added for rich text.
URL	Dynamic web page summary. Select External Artifacts , and then URL . Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third party sites such as google.com.

5. Customize the dashboard using the dashboards settings and the objects' hover toolbar, and then click **Save**.

See [About Your Dashboard's Layout - Version 1.0](#).

You can easily duplicate and modify a dashboard using **Copy As** on the Dashboard list page. Select the Actions icon next to the dashboard you want to copy.

Creating Dashboards Containing Master Forms and Details

You can design dashboards that have one master form and multiple detail (or target) objects (forms or charts). When you do so, the selection of members in the master form automatically filters to the members in the target objects, and the target objects show only the details that are relevant to the members highlighted in the master form.

Considerations when designing dashboards with master forms and target objects:

- Master forms must always be a form (you cannot tag a chart as a master form).
- The target objects can be forms or charts.

- The dashboard containing a master form must always contain more than one object.
- Only one form on a dashboard can be tagged as master. If you want to tag a different form on a dashboard as master, you must first untag the existing master form.

To create a dashboard containing a master form and target objects:

1. Create a dashboard with at least one form and one or more target objects.
See [Creating and Managing Dashboards](#).
2. Ensure the dashboard is in designer mode by clicking **Actions**, and then clicking **Edit**.
3. Select the form on the dashboard that you want to designate as master, click the Settings icon for that form, and then select **Tag as Master**.

To filter the data in the target forms or charts that is relevant to the data in a master form, right-click the relevant data in the master form and select **Apply Context**.

About Your Dashboard's Layout - Version 1.0

About setting up a dashboard layout in version 1.0:

- The first object you drag occupies the whole canvas.
- Then drag objects to the left, the right, the top, or the bottom of the existing object.
- The dashboard canvas provides two types of drop zones: One to place two objects next to each other, each occupying half the space, and the other to place three objects, each occupying a third of the space.
- You can design a dashboard with objects to display vertically, horizontally, and each can have its own size.
- To resize an object that uses **Flexible** layout, drag the object's border. You can also click an object's handle to expand it, and then click the handle again to restore the object to its original size.
- To resize an object that uses **Fixed** layout, set its width or height percentage in **Settings**.
- The form layout can be asymmetric.
- In runtime mode, if a user doesn't have access to a form or if the form is missing, then an adjacent object takes its space. In designer mode, all empty objects are displayed so that the designer can choose to remove them.

About the Gauge Chart Type

Gauge chart types are handy for showing whether data values fall within an acceptable range or not. You set the maximum value, the range maximums, and the gauge displays ranges as red, yellow, and green to help you quickly assess a current value. So, gauge chart types help you identify problems in important data points or measures. For example, you could use a gauge to display the current sales, where the thresholds are set to represent the sales targets.

If the form has multiple values, you can display multiple gauges, up to a maximum of 36 (the values in the first 6 rows and the first 6 columns in the form). The remaining values in the form are ignored. If you want the gauge chart to display only one value, then associate it with a form that has only one cell value.

You can select either a dial gauge or a status meter gauge. You can display a status meter gauge using either horizontal or vertical bars.

Dashboard designers can set:

- **Maximum Value:** The highest value on the gauge. The dashboard designer sets the **Maximum Value** as a default, and then users can temporarily change it at runtime. If the dashboard designer doesn't specify a maximum value, the application automatically sets the maximum value as greater than the value on the gauge.
- **Thresholds:**
 - Low, Medium, and High thresholds: To visually indicate whether a measure lies in the acceptable range or not, these thresholds enable you to display the gauge in red, yellow and green based on the specified values.
 - Thresholds where low values are desirable.
 - Appropriate labels for the thresholds that are displayed when hovering over the thresholds in the gauge.

Settings



Close

Charts | Data | **Gauge**

Maximum Value

Goal High values are desirable Low values are desirable

Low Threshold Maximum Value Label

Medium Threshold Maximum Value Label

High Threshold Maximum Value Label

When setting the Maximum Value for Low, Medium and High Thresholds for a gauge showing % values, use decimal values. For example, enter .25 for 25%. Also, for percentage gauges, always set the Maximum Value to 1.

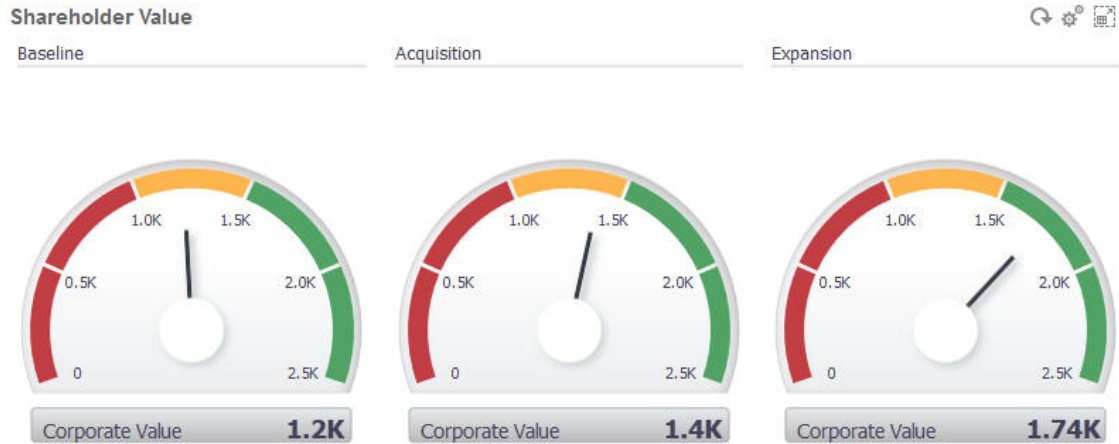
For example, here's a form's data:

Shareholder Value



	Baseline	Acquisition	Expansion			
Corporate Value	1,217.058941308	1,391.87	1,737.72			

Here's the resulting dial gauge:



Here's the resulting status meter gauge with vertical bars:



Note:

If a cell in the form is missing a value, no gauge is displayed for that cell. Also, you must specify at least 2 consecutive thresholds. The application needs the middle threshold value to calculate the chart.

About the Tile Chart Type

A tile is a chart type that lets you select specific values from the cube to display. In addition to using a form as a data source, you can directly enter a cell intersection that provides the value for a tile. You can have up to 6 tiles across, and 4 rows down in a dashboard, and give them a title. Until you associate a tile with data, it displays sample data.

With a form as the data source for a tile:

- You can have up to six tiles per object.
- The values in the first column (up to the sixth row) are used to create the tiles.

 **Note:**

Sometimes in a form, the first column may be collapsed (hidden) when viewed as a grid. But the collapsed column is still considered when the tile gets its values from the form.


- The tile's title is the row's title, and it gets its values from the first column, then by row.
- You can set the tile's title, the tile's height percentage, legend, and can select which axes from the form to include. For example, if you select a form with three rows, the tile displays three values.

With a cell intersection as the data source for a tile, you can have only one tile per object.

 **Tip:**

To select a tile chart type, expand the list of chart types by clicking the link at the bottom of the list.

Here are options you can set for a tile chart type. Note that you can set whether the displayed value is horizontally aligned in the tile to the left, the center, or the right.

Settings
 Close

Charts

Data

Header

Chart Type

Background Fill No Fill Solid Fill

Legend

Legend Position Right Bottom Left Top

Legend Font Size

Value Font Size

Align Text Left Center Right

Scale

Scaling Large Numbers

Especially useful for large numbers, you can scale how a currency value is displayed. For example, if the tile value is 1,689,000 and you select **K** as the scaling option, the tile displays the value as 1689K. Your scaling options:



- **None:** No scaling is applied.

- **Auto:** The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T.
- **K:** The value is displayed as thousands units. For example, 1689000 displays as 1689K.
- **M:** The value is displayed as millions units. For example, 123,456,789 displays as 123M.
- **B:** The value is displayed as billions units. For example, 12,345,678,912 displays as 12B.
- **T:** The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.

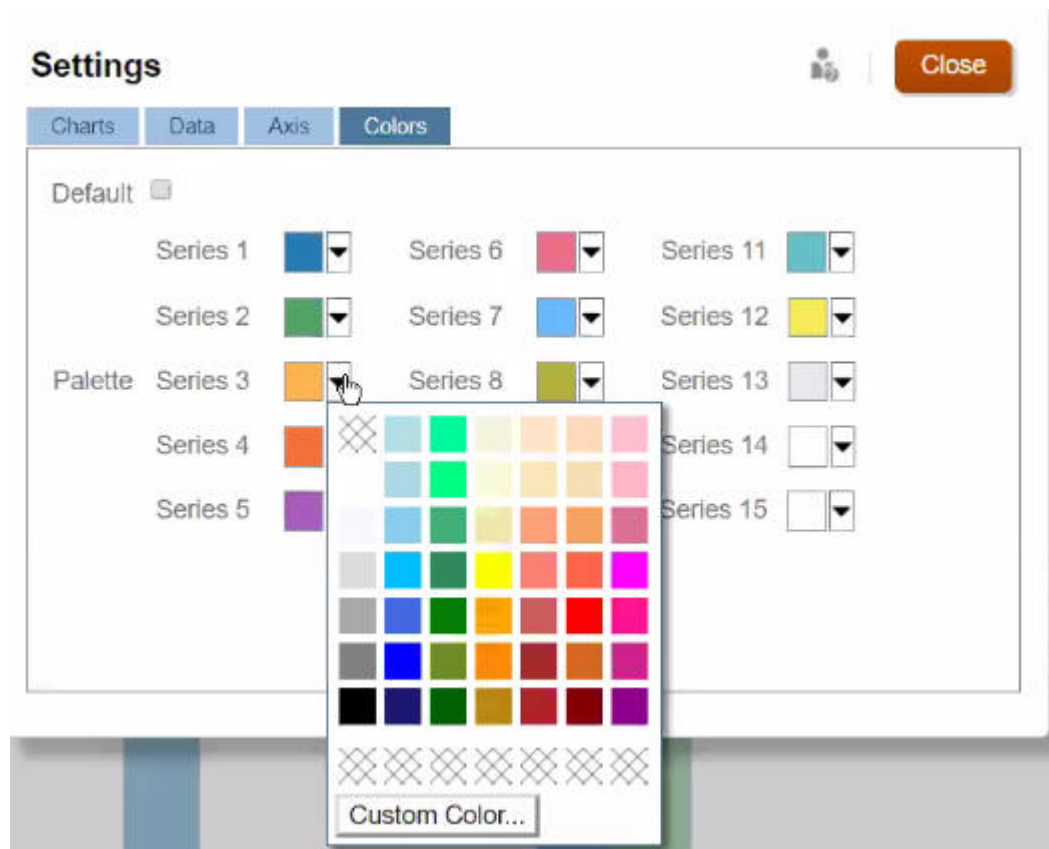
Customizing Dashboard Colors

Maybe your company uses a standard set of colors in charts to denote different types of data. For example, dark blue might represent actual data versus light blue for budget data. When you customize dashboard colors, you select colors in the order of rows on the form. Series 1 represents the first row of data, and so on. You can assign each row in the form a color that represents its data in the chart.

You can customize dashboard colors in Bar, Line, Area, Bubble, Column, Combination, Doughnut, Pie, Radar, and Scatter chart types.

1. With the chart on the dashboard's design palette, click **Settings** .
2. Click **Colors**.
3. Clear the **Default** check box, and then click the down arrow  for the Series you want to change.

Check the chart in the background to see the data type that each series represents.



4. Click the colors you want for the selected Series, and then click **Close**.

 **Note:**

To select more shades of colors than the ones initially displayed, click **Custom Color...**

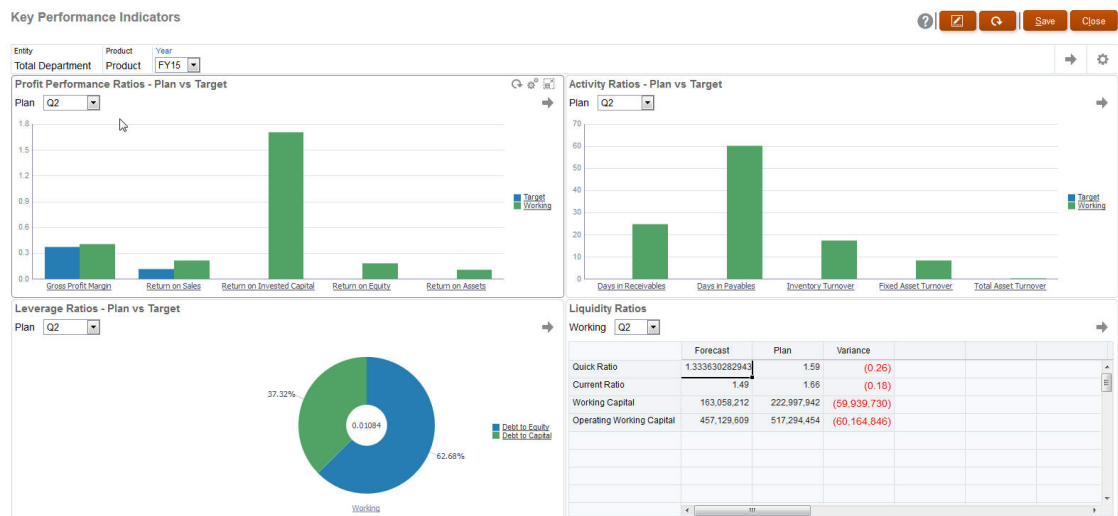
Your selections apply only to the current chart. Follow these steps to change the colors of other charts in the dashboard.

About Global and Local POVs in 1.0 Dashboards

A local POV on a form reflects the dimension members the form designer selected for that form. Dashboards also support *global POV bars*, so that the local POVs that are common are combined in the global POV bar to avoid repeating them in each object.

Dashboard 1.0 POVs Example

Here's a 1.0 dashboard showing a global POV bar (showing Entity, Product, and Year) and a local POV (the Plan drop-down list showing Q2):



With a global POV bar, if you change a page in the global POV bar and then click **GO**, the page changes for all objects that are based on forms. The global POV bar displays at the top of the dashboard above all the objects, while the local POV bar displays within the object. User variables are supported in both global and local POVs in dashboards and you can change dynamic user variables directly from the POV bar.

In dashboard **Settings**, you can set whether to show or hide POVs and whether to enable or disable global POV bars. (If you select **Hide** for **POV Bars**, and **Enable** for **Global POV Bar**, the **Hide** option overrides the **Enable** option.) The global POV bar is enabled by default; if you disable it, the complete POV is displayed for each local POV as applicable.

About global POV bars:

- The POV Bar is made up of local POV dimensions, Page dimensions and user variables.
- Depending on the local POV and page of each form on the dashboard, the global POV bar is automatically calculated.
- They are reflected in the other objects using forms in that dashboard. That is, they apply to forms in a dashboard, to charts that are linked to forms, and to tiles that use forms as a data source. So if the dashboard doesn't include a form as a data source, then neither the local nor global POV bar is available.

Here's an example of how the global POV bar is calculated, based on the local POV dimensions for two forms:

The global POV bar is disabled:

- Form A local POV: Year, Entity, Product
- Form B local POV: Year, Entity, Project

The global POV bar is enabled:

- Global POV bar: Year, Entity
- Form A local POV: Product
- Form B local POV: Project

Because not all dimensions and page selections may be common to all forms on a dashboard, the complete POV for a dashboard object may get split between the local and global POV bar. The global POV bar and the local POV together contain the complete intersection information for each form on a dashboard.

If there is only one object on the dashboard that uses a form as a data source, then the entire POV/page of the form can be moved to the global POV bar.

If there is more than one object on a dashboard that use forms as a data source, then this is how the application determines which dimensions go in the global POV bar or stay in the local POV:

- If the dimension is in the POV or page of all the forms, and the member selection is the same in all the forms, the dimension goes in the global POV bar.
- If the dimension is in the POV on one form and in the page of another form, then the dimension stays in the local POV.
- If the dimension is in the POV, then the same members must be selected in all the forms for the dimension.
- If the dimension is a page dimension, then the selected page members must be the same and display in the same order in all the forms.

The POVs in 1.0 dashboards honor valid intersections by hiding invalid Page members. See [Dashboard POVs and Valid Intersections](#).

Dashboard POVs and Valid Intersections

The POVs in dashboards honor the valid intersections by hiding invalid Page members. Just like in forms, the Page drop-down list is filtered for all selected members in the POV and Page dimensions. Because dashboards support both global and local POVs, the context for filtering the Page drop-down list depends on which POV the members are located. If the Page drop-down list is on a global POV, the filtering context is only the global POV dimensions. If the Page drop-down list is on the local POV, the filtering context is all the global dimensions plus the dimensions on a chart's local POV.

See also [About Global and Local POVs in 1.0 Dashboards](#).

Creating and Managing Dashboards 2.0

Related Topics

- [Concepts in Designing Dashboard 2.0 Dashboards](#)
- [Considerations for Dashboard 2.0](#)
- [Creating Dashboard 2.0 Dashboards](#)
- [Working with the Member Selector When Designing Dashboards 2.0](#)
When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.
- [About Forms 2.0 Grids in Dashboard 2.0](#)
- [About the Geomap Chart Type](#)
- [About the Pyramid Chart Type](#)
- [About the Waterfall Chart Type](#)
- [Using Tables in Dashboards](#)
- [About the Gauge Chart Type for Dashboard 2.0](#)
- [About the Radar Chart Type for Dashboard 2.0](#)
- [About the Combination Chart Type for Dashboard 2.0](#)

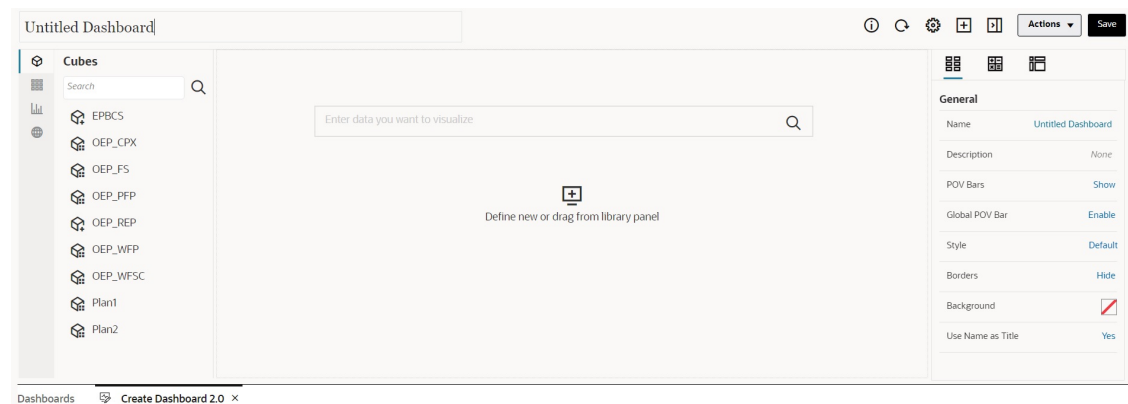
- [About the Tile Chart Type for Dashboard 2.0](#)
- [About Global and Local POVs in Dashboard 2.0](#)
- [About Quick Analysis](#)

Concepts in Designing Dashboard 2.0 Dashboards

This topic contains helpful information as you design Dashboard 2.0 dashboards:

- [About the Dashboard 2.0 Designer](#)
- [Opening the Dashboard 2.0 Designer](#)
- [Data Sources for Charts](#)
- [More Helpful Information About Dashboard 2.0](#)
- [Videos](#)

About the Dashboard 2.0 Designer



The Dashboard Designer consists of the following dashboard components:

- [Object Palette](#)
- [Dashboard Toolbar](#)
- [Dashboard Workspace](#)
- [Properties Panel](#)
- [Dashboard Components](#)

Opening the Dashboard 2.0 Designer

As a reminder, Dashboard 2.0 dashboards on the **Dashboards** page are identified by this icon:



Using Dashboard 2.0 is only supported if Redwood Experience is enabled.

To open the Dashboard 2.0 Designer:

1. From the Home page, click **Dashboards**.
2. Select one of the following options:
 - To create a dashboard, click **Create**, and then select **Dashboard 2.0**.

- To edit a dashboard, in the **Actions** column to the right of the Dashboard 2.0 dashboard you'd like to edit, click **...**, and then click **Edit**.
If you don't need to work with data while editing a Dashboard 2.0 dashboard; for example, you'd like to realign the dashboard components and tiles, click **...**, and then click **Edit without Data**.
- 3. If the Dashboard 2.0 dashboard is open in the runtime environment, you can switch from the runtime environment to the Dashboard Designer environment.
Click **Actions**, and then select **Edit** or **Edit without Data**.



Data Sources for Charts

Dashboard 2.0 supports ad hoc grids, forms, and cubes for choosing the data. You pick the data sources from the object palette.



Note:


You can include a maximum of 12 components in a Dashboard 2.0 dashboard.

- The properties panel provides full data source information for a dashboard component on the **Chart** tab . Select the dashboard component, then click . The data source information is displayed under the **Visualization** heading.
- When using a cube as the data source for quick analysis, drag and drop a cube from the object palette to the dashboard workspace, then click in the Search box and either enter the member name or launch the member selector to choose members. The **Layout** tab will then display in the properties panel where you can pivot the dimensions and choose which dimensions appear on the POV, row, or column axis. See [About Quick Analysis](#).



Note:

There is an upper limit of 50 members across all dimensions that can be selected to create a chart using quick analysis. This limit together with the number of dimensions in the cube will determine the maximum size of the grid that is supported for a chart based on quick analysis.

- When the data source for a dashboard component is a form or an ad hoc grid, the data is fetched using the form definition.
 - You can change the source form in the properties panel by clicking the **Form** property in the  tab of the properties panel.
 - The total amount of form data that's allowed to be visualized in a chart is 10,000 cells. By default, this is 100 rows and 100 columns. However, you can change the number of rows and columns to any combination that totals 10,000 cells or less; for example, if you reduce the number of rows to 5, then you can increase the number of columns to 2,000 (5 x 2000=10,000).
 - If a form's precision is set, displayed values after conversion to Dashboard 2.0 are based on the form's precision setting. If the precision value on a form is not set, then the values displayed after conversion to Dashboard 2.0 might change.

 **Note:**

When the data source for a dashboard component is a form, and the form has rows that contain blank header cells or empty formula rows that are not configured, then the corresponding chart legends will not display.

- For Doughnut, Pie, and Gauge chart types, you can add multiple charts to one component. To add multiple charts, click **Single** or **Multiple** in the chart's **Display** property. If **Single** is selected, the chart displays only the first column of the underlying form's data. If **Multiple** is selected, a chart is displayed for each column of the underlying form's data.

 **Note:**

For dashboards with Doughnut, Pie, and Gauge chart types that are converted from Dashboard 1.0 to Dashboard 2.0, the default option for the **Display** property is **Multiple**. For newly created Dashboard 2.0 dashboards, the default option for **Display** is **Single**.

More Helpful Information About Dashboard 2.0


- As you create a dashboard, click **Actions** and then select **Save and Run** to immediately see how the dashboard looks and works to a dashboard user. To return to designer mode to continue designing the dashboard, click **Actions** and then select **Edit** or **Edit without Data**.
- By default, missing or suppressed data is plotted as zeros. For selected chart types (Area, Bubble, Combination, Line, Radar, and Scatter), you can disable this setting by selecting the **Plot Missing Values as Zero** option in the chart's settings. When this option is disabled, the missing or suppressed data is ignored and is no longer plotted as zeros for those chart types.
- To review Dashboard 2.0 considerations, see [Considerations for Dashboard 2.0](#).

Videos

Your Goal	Watch This Video
Learn how to create a dashboard with multiple components in the Dashboard Designer for Dashboard 2.0.	 Creating Dashboards in Dashboards 2.0






Object Palette


On the left side of the Dashboard Designer is the object palette where you select the content for dashboard components. Simply drag and drop objects from the object palette to the workspace or search for content using the Search box.

The object palette can be resized. To resize the object palette, hover over the right side of the palette and drag it. To hide the palette, hover over the palette until you see the handle icon  , then click it to hide the palette. Click the handle icon again to reopen the palette.

Content in the object palette is grouped into these categories:

Table 13-3 Object Palette Content Categories

Icon	Description
	Cubes: Perform quick analysis by adding components of a cube to a dashboard without having a prebuilt form. See About Quick Analysis .
	Library: Select ad hoc and standard forms to include in the dashboard by navigating to the forms folders or by searching for them by name. <ul style="list-style-type: none"> Click List to view forms in a List View or Tree View. Click  to type search keywords. <p>The access permissions set for forms are honored in dashboards.</p>
	Visualizations: Select a chart to include in the dashboard. To view data in a chart, you must select components of a cube or associate the chart with a form as its data source. When you link a chart to a form, users can immediately see the impact of changing data in the form on the associated charts.
	Other: <ul style="list-style-type: none"> Commentary: Adds the comment you enter below the graph or chart and to the bottom of the Chart tab in the properties panel. Commentary includes a WYSIWYG text editor. URL: Adds the URL you enter below the graph or chart and to the bottom of the Chart tab in the properties panel. URL includes a Reference URL link and the URL must be IFrame supported. <p>Insert only external site URLs starting with the <code>https://</code> security protocol. Don't use internal or relative URLs or URLs for unconsenting third party sites such as google.com.</p> <p>Don't imbed into a dashboard direct URLs to other EPM artifacts such as forms and dashboards on either the same Oracle Enterprise Performance Management Cloud instance or to a different EPM Cloud instance.</p>






 **Note:**

If a URL added to a dashboard doesn't work in the runtime environment, right-click the URL and open the link in a new tab.

Dashboard Toolbar

In the upper right corner of the Dashboard Designer is the dashboard toolbar where you can perform these dashboard tasks:



Table 13-4 Dashboard Toolbar



Icon	Description
	The Information icon displays the folder in which the dashboard is located.
	The Refresh Data icon refreshes all data associated with the entire dashboard.
	The POV Settings icon performs these POV actions: <ul style="list-style-type: none"> • POV : Hide Dimension Labels: If your dashboard contains a global POV bar, select to hide the dimension names on the global POV bar. Clearing this option once again displays dimension names on the global POV bar. • POV : Auto-Apply: If your dashboard contains a global or local POV, enable this action to automatically apply changes to the POV. If you don't want to automatically apply changes, clear this option. • POV : Clear All Page Selections:
	The Add icon adds a new empty dashboard component to the design canvas (this is an alternative to drag and drop).
	The Properties icon hides and unhides the Properties Panel.
Actions menu	The Actions menu enables you to perform these actions: <ul style="list-style-type: none"> • Revert to Last Saved: Discards edits made since the last time the dashboard was saved • Save and Run: Saves any edits made and opens the dashboard in the runtime environment
Save	Clicking Save saves the dashboard definition.

Dashboard Workspace

The large area in the middle of the page between the object palette and Properties panel is the dashboard workspace. In addition to drag and drop, you can use the Search box to specify or search for the data you want to display for each component (a *component* is an empty object in the dashboard workspace into which you can add a dashboard object, such as a chart or a table). You can add up to 12 components to the dashboard workspace.

If Redwood Experience is enabled and the forms version is Forms 2.0, any forms dropped into the workspace are rendered initially as editable grids. Ad hoc grids dropped into the workspace are rendered initially as tables.

- The first object that you drag and drop occupies the entire workspace, then drag additional objects from the object palette to the left, the right, the top, or the bottom of the existing component.
- To move a component to another part of the dashboard, click the component, and then hover your cursor over the upper edge of the component until you see the drag icon. Drag and drop the component to the left, right, top, or bottom of another component and the other components on the dashboard will move and realign.
- To maximize a component so it fills the workspace, click  , and then click **Maximize**. The component will fill the workspace, and the other components on the workspace will be hidden. Clicking  and then **Restore** resizes the component to its original size and makes the other components in the workspace visible again.

- To change the height and the width of components in the dashboard, perform one of the following actions:
 - Drag the borders of the components within the dashboard workspace
 - Select a dashboard component, then in the Properties panel on the right, click  to view and change the component's height and width.
- To maximize the overall size of the dashboard workspace, you can resize or hide the object palette and properties panel on either side of the workspace.
- For a dashboard with a URL component, clicking on the body of the URL component does not switch focus to the URL component. To switch focus to the URL component, either click Alt + W or hover over the URL title bar until you see the cursor change to the move icon , then click to change the focus.

 **Note:**

In the runtime environment, if a user doesn't have access to an object like a form, or if the form is missing, then an adjacent component will take its space. In the designer environment, all empty components are displayed so that the designer can choose to remove them.

Properties Panel

On the right side of the Dashboard Designer is the Properties panel where you can set general properties for the entire dashboard as well as component-specific properties.



The Properties panel can be resized. To resize the panel, hover over the left side of the panel and drag it. To hide the panel, click  at the top of the page. Click  again to reopen the panel.

Table 13-5 Properties Panel




Icon	Description
	<p>The General tab includes the following properties for the entire dashboard:</p> <ul style="list-style-type: none">• Name: Edit the title of the entire dashboard.• Description (optional): Describe the dashboard.• POV Bars: Show or hide POV bars.• Global POV Bar: Enable or disable the global POV bar.• Style: Select the dashboard color scheme. Options are Default, Light, and Dark. <div style="border-left: 2px solid #0070C0; padding-left: 10px;"><p> Note:</p><p>If you select Dark, dashboard error messages and legend text will be more difficult to view.</p></div> <ul style="list-style-type: none">• Borders: Show or hide component borders.• Background: Select a new dashboard background from a menu of colors. <div style="border-left: 2px solid #0070C0; padding-left: 10px;"><p> Note:</p><p>If your dashboard contains a grid, only the background color will change. The grid color will remain the same.</p></div> <ul style="list-style-type: none">• Use Name as Title: Selecting No lets you customize the dashboard's title. You can further customize the title by changing the font family, font size, bolding, italicizing, underlining, font color, and font background color. <p>For information about POVs, see About Global and Local POVs in Dashboard 2.0.</p>


Table 13-5 (Cont.) Properties Panel

Icon	Description
	The Associations tab lists the rules associated with the dashboard and the underlying form data.

 **Note:**


You can associate rules which are required to be run during a global **Save**. These rules can be associated or removed at any time.

You can add rules and edit them:

- If no rules are associated, click  to view a list of rules from which to choose. Rules already associated with forms in the dashboard are listed first and are named as follows:
Business Rules for <name of form>
- When you add rules, you'll need to specify when the rule should run: **Before Load, After Load, Before Save, After Save, Use Members on Form, Hide Prompt**.
- Under **Actions**, you can delete rules or change the order in which they will run: **Move to Top, Move Up, Move Down, Move to Bottom**, and **Delete**.
- If the rules have runtime prompts, they will be displayed when the rule is run.

See [Setting Business Rule Properties](#).

Table 13-5 (Cont.) Properties Panel

Icon	Description
	<p>The Chart tab includes properties for the selected components in the dashboard such as chart title, component height, width, and background color. You can also change the chart type, the data source type, and which underlying form is used for each component. Using different background colors for each component enables you to uniquely differentiate each dashboard component. Removing the chart title frees space that is then adjusted for the local POV bar and for the chart itself.</p> <p>For rows and columns, the total amount of form data that's allowed to be visualized in a chart is 10,000 cells. By default, this is 100 rows and 100 columns. However, you can change the number of rows and columns to any combination where the multiplication totals 10,000 cells or less; for example, if you reduce the number of rows to 5, then you can increase the number of columns to 2,000 (5 x 2000=10,000).</p>




 **Note:**

The 10,000 cell visualization limit does not apply to grids.

If the form associated with a chart exceeds the 10,000 cell visualization limit, it might result in discrepancies between the data you see in the form and the way the data is visualized in the dashboard chart. It also might result in some other runtime issues such as drilling through on charts and legends.

If you've added **Commentary** or **URL** information types to this component, you can edit the content of those information types at the bottom of this tab.

Table 13-5 (Cont.) Properties Panel

Icon	Description
 (this icon will change depending on the component that's selected in the dashboard)	<p>This tab lets you customize visualizations for the selected chart or table.</p> <p>Set display properties for the selected components such as how to scale values, show or hide row dividers or grid lines, choose different font sizes and colors for headers and data, set orientation vertically or horizontally, define legend positions, add spark charts to tables, add a secondary Y-axis, and so on.</p> <p>See the chart type topics for detailed property descriptions.</p>
<div style="border-left: 2px solid #0070C0; padding-left: 10px;"> <p> Note:</p> <p>For data visualizations in Dashboard 2.0, the custom color palette now supports only 12 colors instead of 15. If you created a dashboard in an earlier update that used 15 colors, you will continue to see 15 colors at runtime. However when you try to change the custom colors, the dashboard designer will only display 12 colors from which you can select and save.</p> </div>	
	<p>The Layout tab includes the POV, Row, and Column properties for the selected cube for quick analysis.</p> <p>See About Quick Analysis.</p>

Dashboard Components

You can add up to 12 components to the dashboard workspace.

When you hover over a component in the workspace, a toolbar for that component displays in the upper right corner:



Table 13-6 Dashboard Components Toolbar






Icon	Description
	Information: Displays the underlying form details, including the form name, the folder path of the form, and the cube
	Save: Saves any changed data and runs any rules associated with the component
	Refresh: Refreshes the data associated with the dashboard component
	Chart Type: Changes the chart type associated with the component

Table 13-6 (Cont.) Dashboard Components Toolbar

Icon	Description
	<p>Actions menu:</p> <ul style="list-style-type: none"> • Maximize: Enlarges the dashboard component. Once maximized, click Restore to minimize the dashboard component to its original size. • Open Form: Opens the runtime form associated with the component in a dynamic tab next to the current tab. • Edit Form: If you have the correct permissions, opens the form associated with the component in the forms editor. The forms editor opens in a dynamic tab next to the current tab. • Delete: Deletes a form.

Considerations for Dashboard 2.0

Note the following considerations when using Dashboard 2.0:

- 3D visualization is not supported in Dashboard 2.0. This affects the following Dashboard 2.0 chart types:
 - Area
 - Bar
 - Bubble
 - Column
 - Combination
 - Doughnut
 - Gauge
 - Grid
 - Line
 - Radar
 - Scatter

 **Note:**

Dashboard 1.0 still supports 3D visualizations for charts, as applicable.

- In a future update, Dashboard 2.0 will support Smart Push.
- Funnel charts are useful for viewing data for stages of a process, such as the stages of a sales process. The area of a funnel slice is proportional to its value for the corresponding stage. Dashboard 1.0 renders the funnel chart very differently than the way in which Dashboard 2.0 renders the funnel chart. In Dashboard 1.0, the funnel chart supports multiple columns, and the first two rows of the form are used to compare Actual with Target. The chart then plots the differences between the two in the funnel corresponding to the respective column. In Dashboard 2.0 the funnel chart supports only the first column and the area of the funnel corresponding to each cell on the row is colored and is sized proportionally to its numeric value.

- All future dashboard enhancements will be in Dashboard 2.0.

Forms Versions and Dashboard 2.0

Runtime forms are also available in two versions:

- **Forms 1.0:** Uses Slick Grid with Oracle ADF Fuse components
- **Forms 2.0:** Uses Slick Grid with Oracle JET components

Just like in Dashboard 2.0, Forms 2.0 is available only if **Redwood Experience** is enabled. Certain features in Dashboard 2.0 only work with Forms 2.0; for example, Dashboard 2.0 only lets you work directly with data in form grids if the underlying form is a Forms 2.0 form. The **Forms Version** can be updated in your application settings.

You'll need to be aware of some differences in the way the dashboard versions interact with the forms versions.

When the **Forms Version** application setting is set to **Forms 1.0**:

- You can continue to use Dashboard 1.0 with Forms 1.0.
- You cannot use Dashboard 2.0 with Forms 1.0.

Forms 2.0 is supported with Dashboard 2.0 only. Use Forms 2.0 with Dashboard 2.0 for all interactions.

If you've selected a Dashboard 2.0 dashboard and you see an `Error` during `Dashboard 2.0 component initialization` message, the dashboard has Forms 2.0 forms associated with it and you'll need to ensure that Redwood Experience and Forms 2.0 are enabled before you can view the dashboard.

- When Dashboard 2.0 artifacts are created, the **Grid** visualization option will not be available.
- To use forms as grids in Dashboard 2.0, update the **Forms Version** application setting to Forms 2.0.
- Existing Dashboard 2.0 dashboards (Dashboard 2.0 dashboards created before November 2023) will continue to display forms as tables and charts, not grids.

When the **Forms Version** application setting is set to **Forms 2.0**:

- You can continue to use Dashboard 1.0 with Forms 2.0.
- Dashboard 2.0 will display the **Grid** visualization option, which uses Forms 2.0 with read, write, and calculate abilities.
- Forms 2.0 within Dashboard 1.0 will appear as Forms 1.0.

Note:

Saved forms definitions can be used as a data source for dashboard charts regardless of the **Forms Version** application setting: **Forms 1.0** or **Forms 2.0**.

Creating Dashboard 2.0 Dashboards

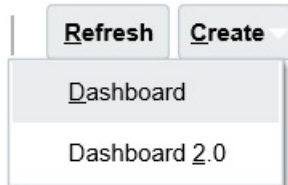
Need help deciding which dashboard version to choose? See [About Dashboard Versions](#).

 **Note:**

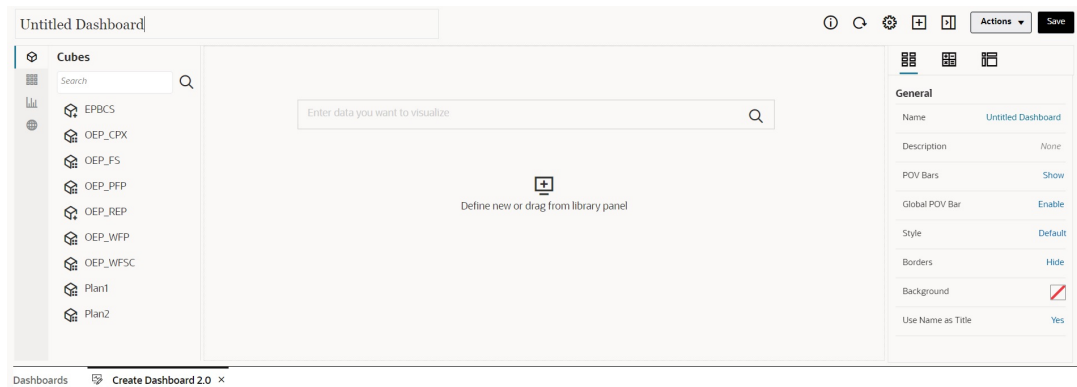
To create a Dashboard 1.0 dashboard, see [Creating Dashboard 1.0 Dashboards](#).

To create a Dashboard 2.0 dashboard:

1. From the Home page, click **Dashboards**, and then click **Create**.



2. From the options provided, select **Dashboard 2.0**.



3. Enter a name for the dashboard by clicking the default dashboard name and entering a new name in the input box.
4. Drag and drop content from the object palette on the left onto the dashboard workspace. Customize the dashboard using the dashboard settings and properties.

For a detailed description of the Dashboard Designer, see [Concepts in Designing Dashboard 2.0 Dashboards](#).

While working on the dashboard, you can save it as a new dashboard, including any unsaved changes. To do so, click **Actions**, then **Save As**, and then save the dashboard with the new name.

5. Click **Save**.

You can easily duplicate and modify a dashboard using **Copy As** on the **Dashboards** listing page. Select the **Actions** icon **•••** next to the dashboard you want to copy.

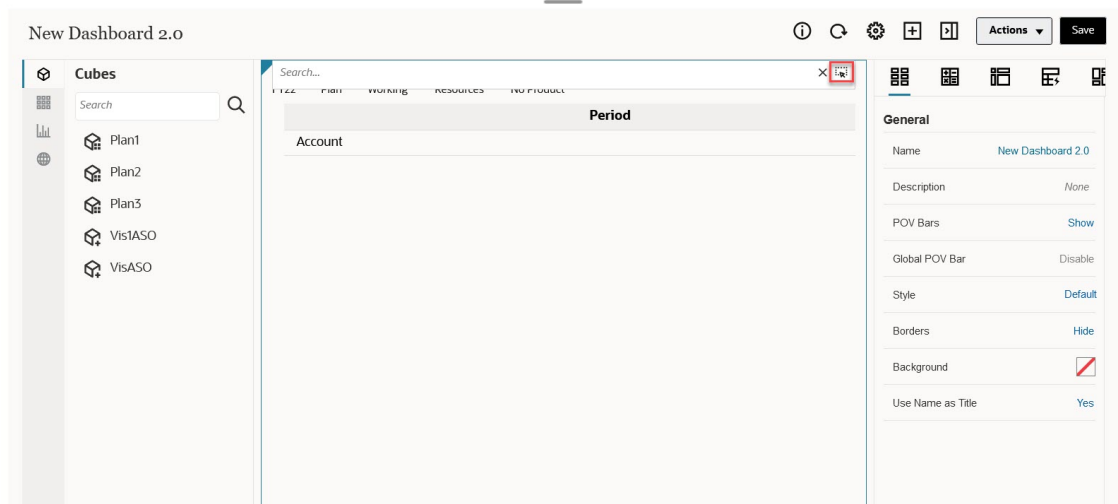
Working with the Member Selector When Designing Dashboards 2.0

When designing Dashboard 2.0 dashboards, you can easily search for and select new dimension members using the member selector.

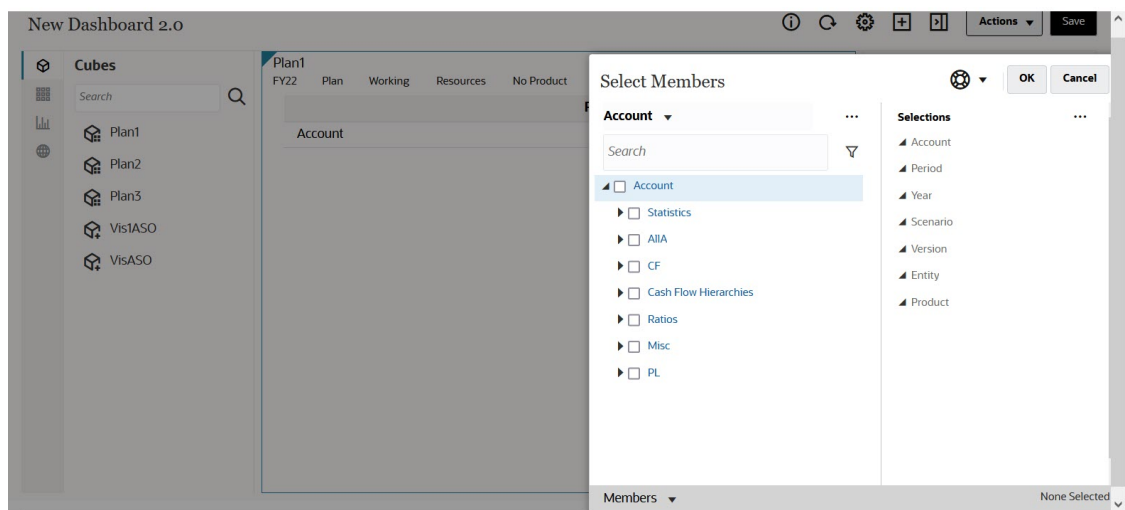
When you're creating a Quick Analysis in your dashboard, after you add a cube, you can select members for each dimension using the member selector.

To open the member selector for Quick Analysis:

Click the member selector icon in the Quick Search bar:



Select members for each dimension using the member selector.

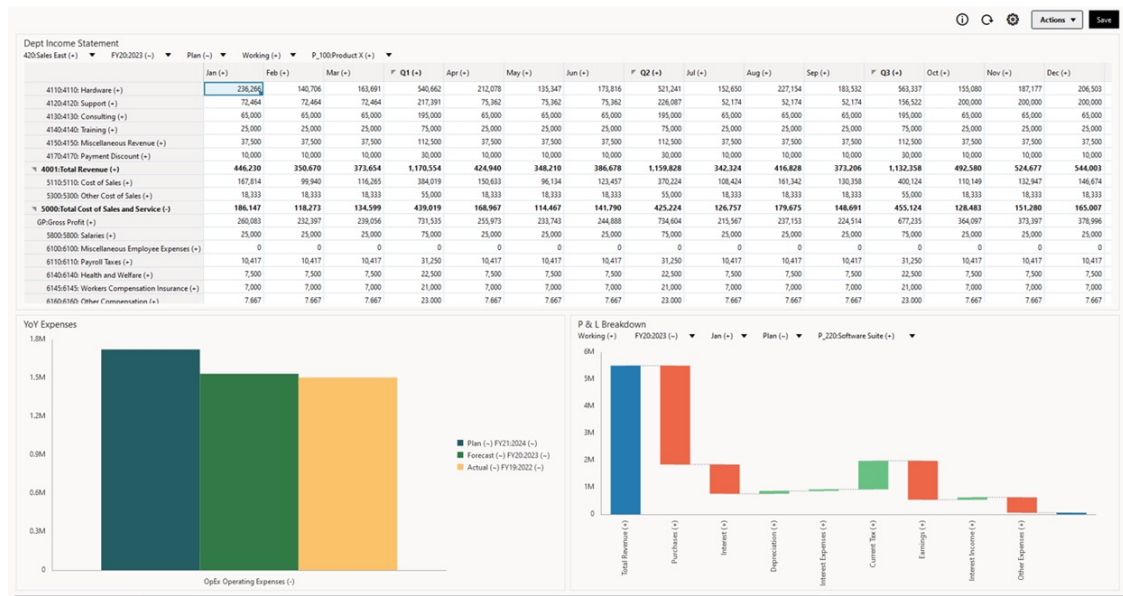


For more information about working with the member selector, see [Using the Member Selector](#).

About Forms 2.0 Grids in Dashboard 2.0

Newly added components in Dashboard 2.0 default to displaying the form grid, and the grids are writable if the associated form is a Forms 2.0 form. Grids in dashboards enable you to work directly with data in forms if the underlying form is a Forms 2.0 form. You can write-back data updates and invoke rules in dashboards with grid components. You can also right-click inside a grid to view a context menu where you can perform additional grid actions such as grid spread, and adding comments and attachments.

Example Dashboard with a Grid and Charts



About the Geomap Chart Type

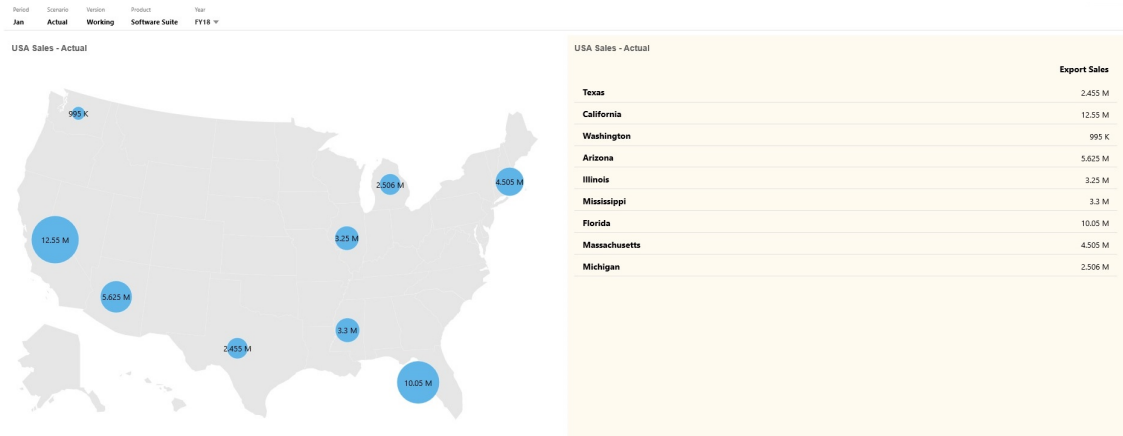
Geomaps are geographical maps with overlays and charts that display some measure about each of the geographical areas that are displayed. Hovering over the bubbles or the color highlight in the Geomap displays a data label.



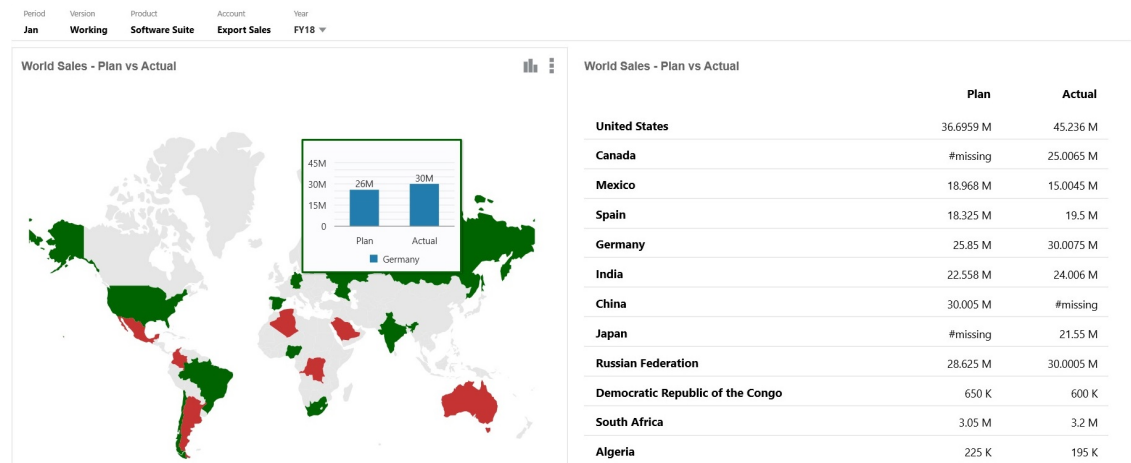
Note:

Color highlight geomaps are designed to show any variances (red or green, depending upon your **Desired Variance Trend** setting) based on the values in the underlying data. If a geomap region has missing values in the 1st or 2nd column or if the values in those columns are equal and there is no variance, the region will be highlighted blue. Hovering over a highlighted region displays a bar chart with all the values for the row except for any missing values.

Example Geomap - USA Sales Using Data Bubbles



Example Geomap - World Sales Using Color Highlight



Dashboard designers can set these geomap chart properties:


Table 13-7 Geomap Chart Properties

Setting	Description
Map Layer	Select World or narrow the scope of the map to a continent such as Asia , North America , or Africa .
Type	<p>The Data Bubbles geomap displays data as sized bubbles over the map layer. The Color Highlight geomap compares two data values, displaying geographical areas that have an increase in green, and those with a decrease in red.</p> <p>Select Data Bubbles or Color Highlight and then specify the following additional options:</p> <ul style="list-style-type: none"> For Data Bubbles, select the desired settings for Label (Show or Hide), Label Color, and Bubble Color. For Color Highlight, specify the Desired Variance Trend (Increase or Decrease).

Table 13-7 (Cont.) Geomap Chart Properties

Setting	Description
Geography Names	<p>We've provided you with a metadata load file that contains the geographical elements the geomap uses like countries, states, and cities. Click to download a CSV file which you can then upload into a dimension as new members or (with some manual changes) as aliases to existing members in your application.</p> <p>Note that geomaps only work if the geography names in the forms match exactly the geography names that Dashboard 2.0 uses for its map layers. So if your entity/geography dimension says, for example, USA, that won't be recognized as a valid name in the map layer, which uses United States.</p>

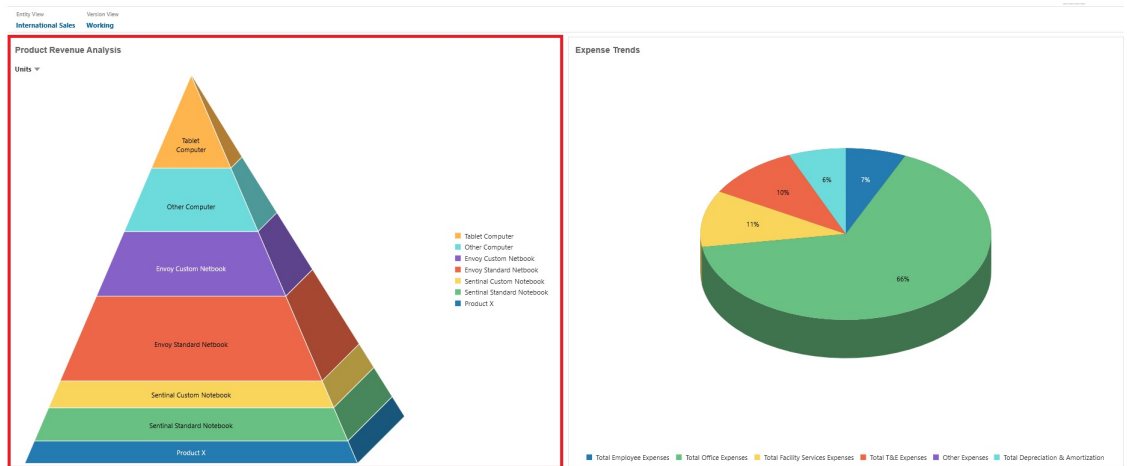
Videos

Your Goal	Watch This Video
Learn how to download geography members for geomap charts, then import them into your dimension. You learn how to set up both data bubble and color highlight geomap charts.	 Creating Geomaps in Dashboards 2.0

About the Pyramid Chart Type

Pyramid chart types use a triangle diagram to represent hierarchies visually. The triangle is divided into sections, illustrating vertically top-down and broad-narrow structures and processes.

Example 3D Pyramid Chart



Dashboard designers can set these pyramid chart properties:

Table 13-8 Pyramid Chart Properties

Setting	Description
Legend Position	Choose Left, Right, Top, Bottom, or None.
Value Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
3D Graph	Choose Yes to visualize the data as a 3D chart.
Color	Select Default or click a section of the pyramid chart and choose a custom color for that section.

About the Waterfall Chart Type

Waterfall charts display a running total of positive and negative values, which is helpful in showing how you arrived at a net value from an initial value.

Waterfall charts are used to portray how an initial value is affected by a series of intermediate positive or negative values. Usually the initial and the final values (end points) are represented by whole columns, while the intermediate values are shown as floating columns that begin based on the value of the previous column. The columns can be color-coded to distinguish between positive and negative values.

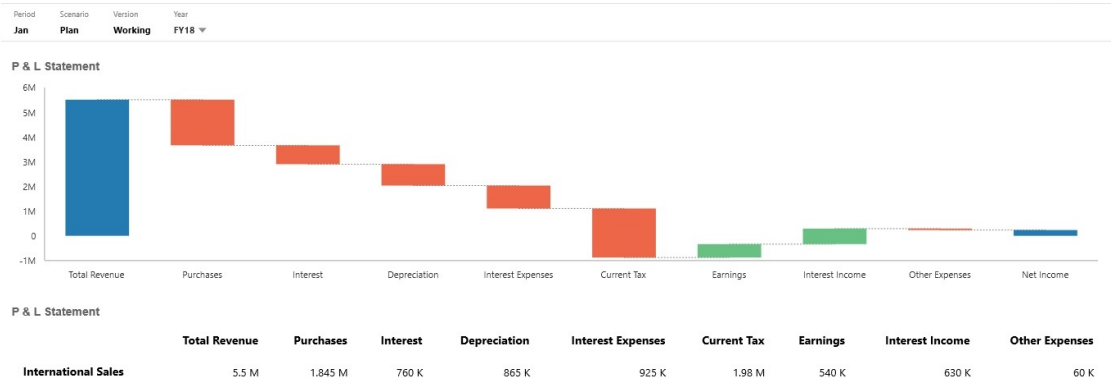
Example Waterfall Chart - Inventory Analysis

This example visualizes changes in a single account over time.



Example Waterfall Chart - P & L Statement

This example has expense accounts that are shown as a negative change to Total Revenue, and income accounts that are shown as a positive change, for a final Net Income value.



Dashboard designers can set these waterfall chart properties:


Table 13-9 Waterfall Chart Properties

Setting	Description
Value Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Grid Lines	Select Hide or Show to display the x-axis lines of the grid.
Connecting Lines	Select Hide or Show to display the lines connecting the end of each column to the beginning of the next column. This helps visualize the flow of the data in the chart.

Table 13-9 (Cont.) Waterfall Chart Properties

Setting	Description
Plot Deltas	<p>Select Yes to automatically calculate and plot the common start and end points from one bar to the next based on the values provided. This is useful for showing the trend for balance type of accounts.</p> <p>Otherwise, select No to manually set increase and decrease points. When No is selected, you can manually set these increase/decrease options on a bar-by-bar basis:</p> <ul style="list-style-type: none"> • Bar Direction: Select a bar to manually set the bar direction to increase/decrease. • All bars: Display a list of all bars in the chart to manually set bar directions to increase/decrease. <p>The manual options you can set for each bar are Auto, Reverse, and Total. Auto will consider the positive/negative values from the data source and plot accordingly. Reverse will change the sign, and Total will make the chart restart at the corresponding bar.</p>
Increase	Select a color for each property.
Decrease	
Total	
End Bar	Select whether to Hide or Show the end bar on the chart. In the preceding example, the end bar is shown. If the end bar is shown, you can specify a label.
Axes	Select a Custom Range for the X-Axis and the Y-Axis , or select Off .

Videos

Your Goal	Watch This Video
Learn how to create waterfall charts to track the changes in a single account over time and to track how multiple accounts interact to produce a final total.	 Creating Waterfall Charts in Dashboards 2.0

Using Tables in Dashboards

Tables in dashboards provide a list view of the data showing multiple values from a form or grid. You can embed mini-charts into each row of the table, called Spark Charts, which plot column data. Tables are also searchable. Note that currency symbols or currency codes are displayed in tables for multicurrency applications.

Example Dashboard Showing Plain Tables

Balance Sheet - Plan				
	Q1	Q2	Q3	Q4
Current Assets	535 M	557 M	588 M	625 M
Fixed Assets	54 M	50 M	45 M	41 M
Other Assets Total	223 M	223 M	223 M	223 M
Total Assets	812 M	830 M	857 M	890 M
Current Liabilities	335 M	336 M	337 M	345 M
Long Term Liabilities	44 K	44 K	44 K	44 K
Total Owners Equity	477 M	494 M	519 M	545 M
Total Liabilities and Owners Equity	812 M	830 M	857 M	890 M

Balance Sheet - Forecast				
	FY16 Q3	FY16 Q4	FY17 Q1	FY17 Q2
Current Assets	479.40 M	515.61 M	488.15 M	500.23 M
Fixed Assets	61.17 M	59.33 M	53.98 M	50.52 M
Other Assets Total	223.09 M	223.09 M	223.09 M	223.09 M
Total Assets	763.66 M	798.02 M	765.21 M	773.85 M
Current Liabilities	331.48 M	338.24 M	333.92 M	335.93 M
Long Term Liabilities	43.77 K	43.77 K	43.77 K	43.77 K
Total Owners Equity	432.07 M	459.66 M	431.25 M	437.87 M
Total Liabilities and Owners Equity	763.59 M	797.94 M	765.21 M	773.85 M

Example Dashboard Showing a Table With a Spark Chart

Balance Sheet - Plan				
	Q1	Q2	Q3	Q4
Current Assets	535 M	557 M	588 M	625 M
Fixed Assets	54 M	50 M	45 M	41 M
Other Assets Total	223 M	223 M	223 M	223 M
Total Assets	812 M	830 M	857 M	890 M
Current Liabilities	335 M	336 M	337 M	345 M
Long Term Liabilities	44 K	44 K	44 K	44 K
Total Owners Equity	477 M	494 M	519 M	545 M
Total Liabilities and Owners Equity	812 M	830 M	857 M	890 M

Balance Sheet - Forecast				
	FY16 Q3	FY16 Q4	FY17 Q1	FY17 Q2
Current Assets	479.40 M	515.61 M	488.15 M	500.23 M
Fixed Assets	61.17 M	59.33 M	53.98 M	50.52 M
Other Assets Total	223.09 M	223.09 M	223.09 M	223.09 M
Total Assets	763.66 M	798.02 M	765.21 M	773.85 M
Current Liabilities	331.48 M	338.24 M	333.92 M	335.93 M
Long Term Liabilities	43.77 K	43.77 K	43.77 K	43.77 K
Total Owners Equity	432.07 M	459.66 M	431.25 M	437.87 M
Total Liabilities and Owners Equity	763.59 M	797.94 M	765.21 M	773.85 M


	YearTotal	Trend
Purchases	7,893.58 K	
Total Revenue	82,791.69 K	
Interest	35,350 K	
Depreciation	4,531.83 K	
Current Tax	3,344 K	
Earnings	35,350 K	
Interest Expenses	3,480 K	
Interest Income	3,164 K	
Other Expenses	430 K	
Gross Profit Margin	71.21%	

Dashboard designers can set these table properties:

Table 13-10 Table Properties

Setting	Description
Value Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the table displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Row Divider	Choose Show or Hide .
Font	Specify size and color options for headers and data.
Spark Chart	<ul style="list-style-type: none"> • Chart Type: Select Bar, Line, Area, and Line with Area with associated options. Or you can select None. • Header: Column header for the Spark Chart column • Starting Index: Column index where to start charting data • Ending Index: Column index where to stop charting data

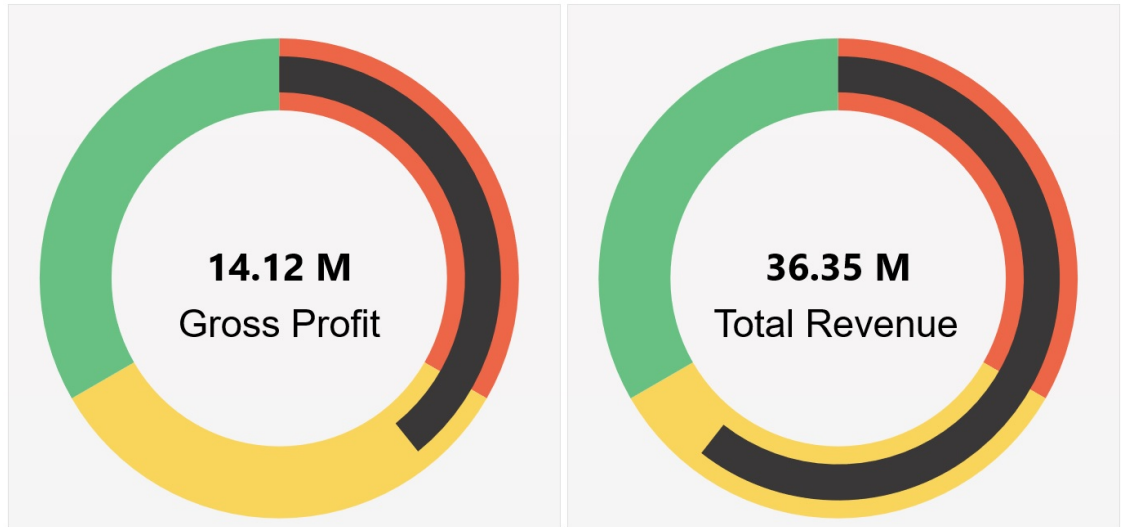
Videos

Your Goal	Watch This Video
See how to create a dashboard with multiple components in the Dashboard Designer for Dashboard 2.0. You create a dashboard with a table, a table with a spark chart, and a tile chart.	 Creating Table, Spark, and Tile Charts in Dashboards 2.0

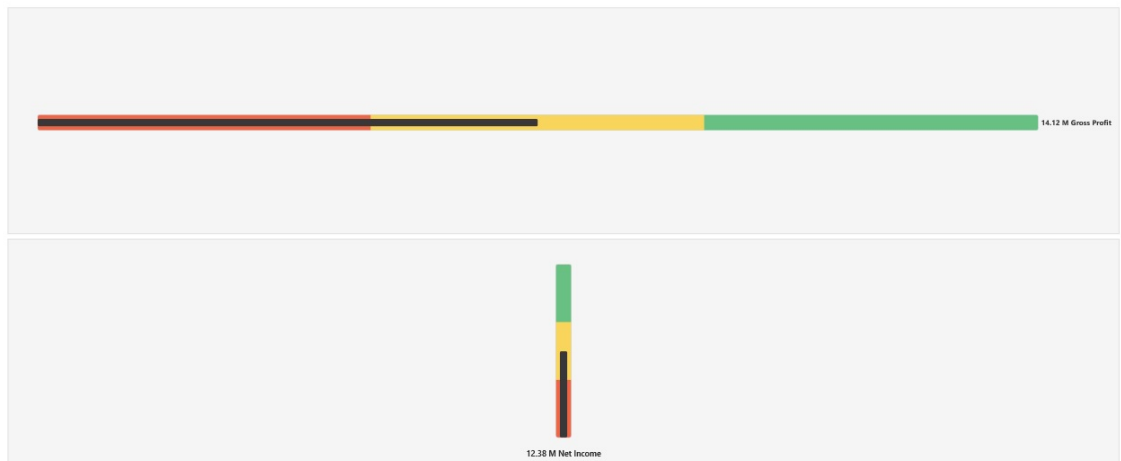
About the Gauge Chart Type for Dashboard 2.0

Gauge chart types show you whether data values fall within an acceptable range or not. You set the minimum and maximum values, the range maximums, and the gauge uses red, yellow, and green traffic lighting to help you quickly assess a current value and identify problems in important data points or measures. For Dashboard 2.0 dashboards, you can select circular, horizontal, and vertical gauge types.

Dashboard 2.0 Example - Circular Gauge Type

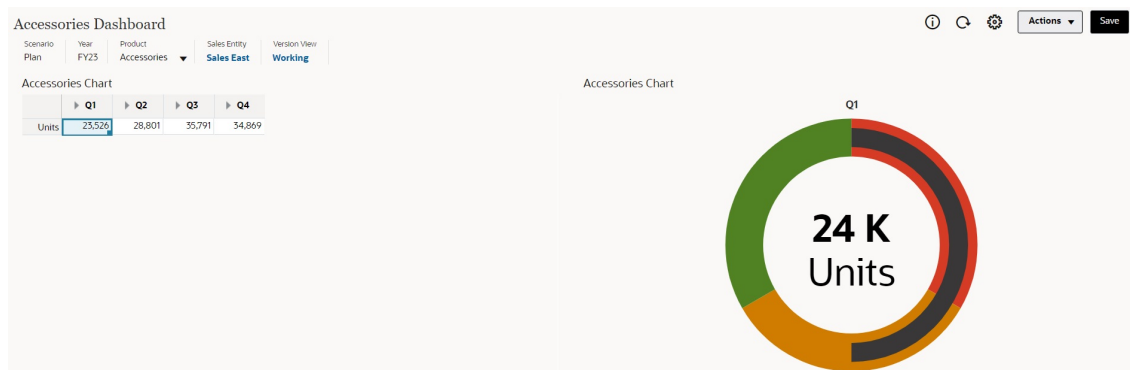


Dashboard 2.0 Example - Horizontal and Vertical Gauge Types



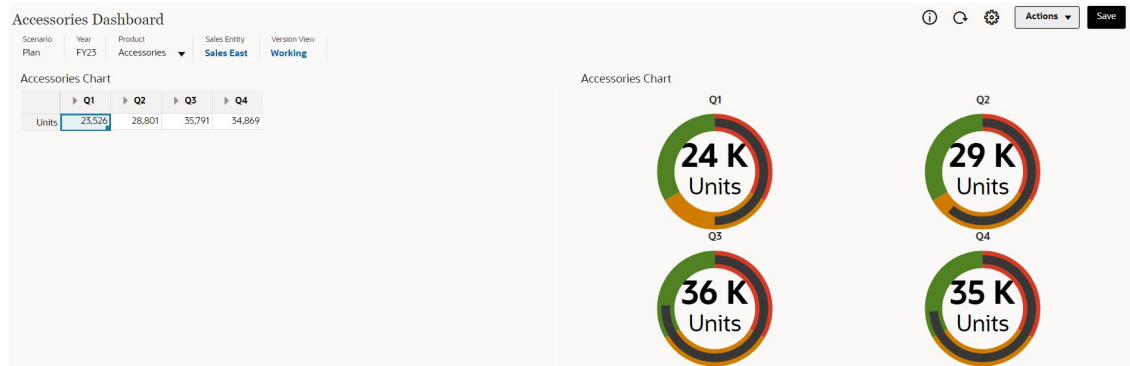
Dashboard 2.0 Example - Single Gauge Display

For **Display**, if **Single** is selected, then the gauge chart displays only the first column of the underlying form's data.



Dashboard 2.0 Example - Multiple Gauge Display

For **Display**, if **Multiple** is selected, then a gauge chart is displayed for each column of the underlying form's data.



Dashboard designers can set these gauge chart type properties:

Table 13-11 Gauge Chart Type Properties

Setting	Description
Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Display	<p>You can display Single or Multiple gauge charts in a component. If Single is selected, then the gauge chart displays only the first column of the underlying form's data. If Multiple is selected, then a gauge chart is displayed for each column of the underlying form's data.</p>
Gauge Type	<p>Select from the following options:</p> <ul style="list-style-type: none"> • Circular • Horizontal • Vertical
Minimum Value Maximum Value	<p>The lowest and highest values on the gauge. The dashboard designer sets the values as a default, and then users can temporarily change them at runtime. If the dashboard designer doesn't specify these values, the application automatically sets the minimum value as zero and the maximum value as greater than the value on the gauge.</p>

Table 13-11 (Cont.) Gauge Chart Type Properties

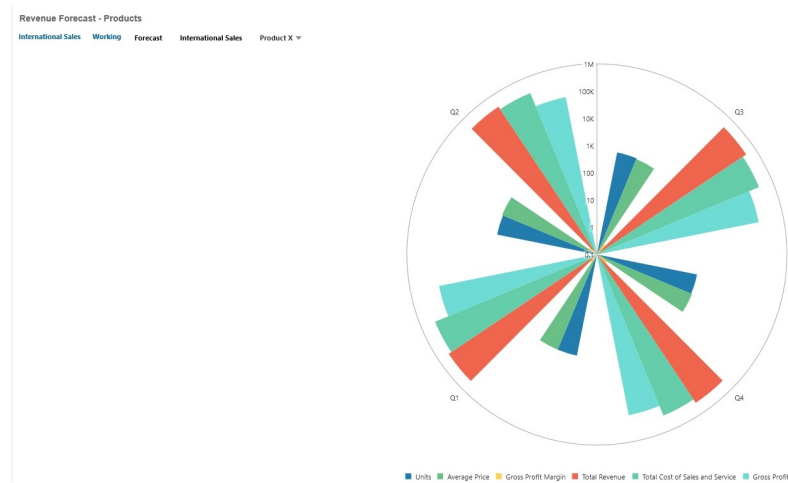
Setting	Description
Desired Goal	Specify whether High values or Low values are desirable.
Low Threshold	To visually indicate whether a measure lies in the acceptable range or not, these thresholds enable you to display the gauge in red, yellow and green based on the specified values. Specify a text Label and a number Value for each threshold.
Medium Threshold	
High Threshold	

About the Radar Chart Type for Dashboard 2.0

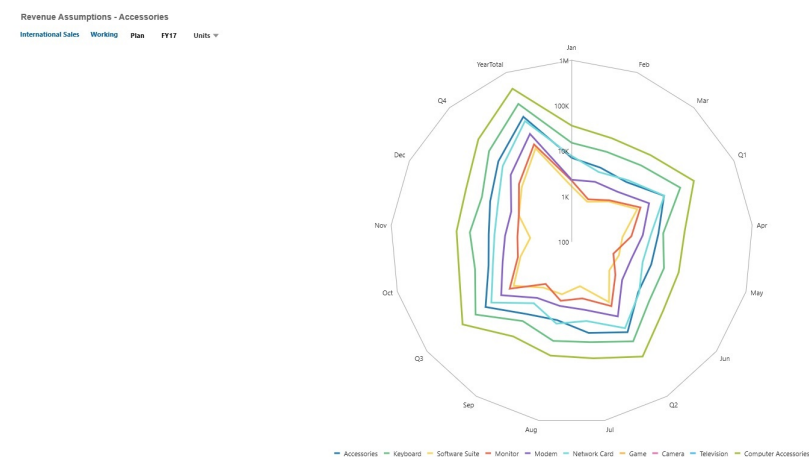
A radar chart is a two-dimensional chart type designed to plot one or more series of values over multiple quantitative variables. Radar charts are best for determining which variable in the data is doing better than the rest. Hence, they are mostly used for performance analysis.

For Dashboard 2.0, you can select bar, line, area, scatter, and bubble radar types.

Dashboard 2.0 Example - Radar Bar Chart Type



Dashboard 2.0 Example - Radar Line Chart Type



Dashboard designers can set these radar chart type properties:

Table 13-12 Radar Chart Type Properties

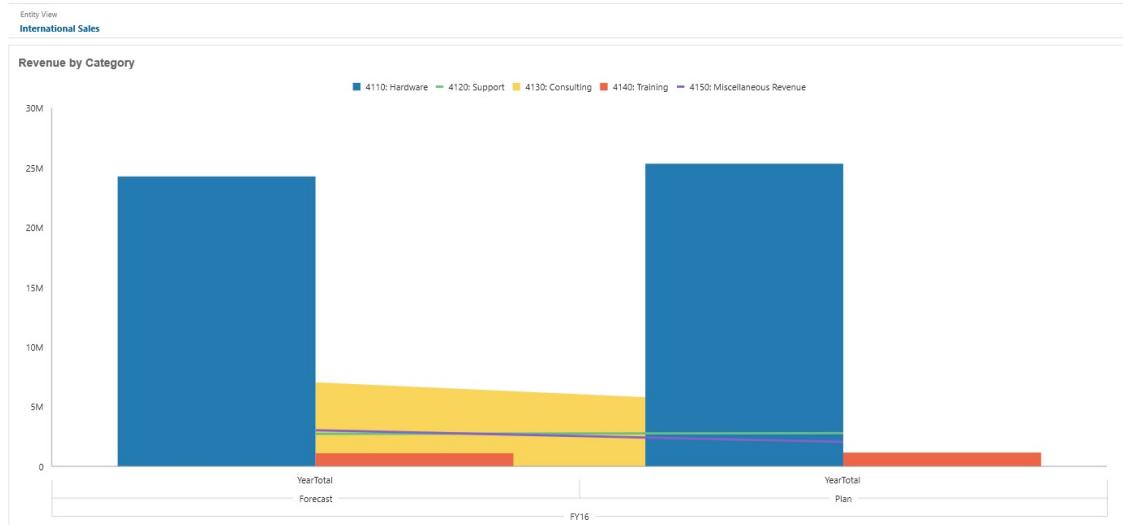
Setting	Description
Value Scale	Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K. Your scaling options: <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Type	Select from the following options: <ul style="list-style-type: none"> • Bar • Line • Area • Scatter • Bubble
Legend Position	Choose Left , Right , Top , Bottom , or None .
Grid Lines	Select Hide or Show .
Logarithmic Scale	Especially useful for displaying numerical data that covers a wide range of values (typically, the largest numbers in the data are hundreds or even thousands of times larger than the smallest numbers), a logarithmic scale displays these values in a way that is more compact and readable. Select whether to use a logarithmic scale in your radar chart.
Color	Select Default or click data in the chart and choose a custom color for that data.

About the Combination Chart Type for Dashboard 2.0

The combination chart is a visualization that lets you merge into one chart any combination of bar, line, and area charts.

You can also add a secondary Y-axis on the opposite side from the primary Y-axis. Adding a secondary Y-axis lets you display the scale for one measure that doesn't scale appropriately with the other measures on the chart; for example, showing a percentage measure and a currency measure on the same chart.

Dashboard 2.0 Example - Area Bar Line Combination Chart



Dashboard designers can set these combination chart type properties:

Table 13-13 Combination Chart Type Properties

Setting	Description
Value Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K.</p> <p>Your scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Line Weight	<p>Click the counter to set the line width.</p> <p>Note that the default width of a line is 5 pixels. You can select from 1 to 12 pixels.</p>
Legend Position	Choose Left , Right , Top , Bottom , or None .
Label Position	Set the position of the data labels on the chart.
Grid Lines	Choose Outside Bar Edge , Center , Inside Bar Edge , or None .
Grid Lines	Select Hide or Show .
Logarithmic Scale	<p>Especially useful for displaying numerical data that covers a wide range of values (typically, the largest numbers in the data are hundreds or even thousands of times larger than the smallest numbers), a logarithmic scale displays these values in a way that is more compact and readable. Select whether to use a logarithmic scale in your combination chart.</p>

Table 13-13 (Cont.) Combination Chart Type Properties

Setting	Description
Secondary Y	Select which data to plot on a secondary Y-axis which will appear on the opposite side of the chart from the primary Y-axis. When the data values in a chart vary widely from data series to data series, or when you have mixed types of data (for example, currency and percentages), you can plot one or more data series on a secondary vertical (Y) axis. While the secondary Y-axis can be used with any line and bar chart type, it is more commonly used with the combination chart type, which helps to distinguish the data series that are plotted on the secondary Y-axis. For example, use a bar for the primary Y-axis, and line for the secondary Y-axis.
Series	Select the bar/line/area combination for the chart.
Color	Select Default or click data in the chart and choose a custom color for that data.
Axes	Select a Custom Range for the X-Axis , Y-Axis , and Secondary Y-Axis , or select Off .

About the Tile Chart Type for Dashboard 2.0

A tile is a chart type that lets you select specific values from the cube to display. In addition to using a form as a data source, you can directly enter a cell intersection that provides the value for a tile. By default, six tiles are initially displayed in a component, but you can display up to 10 tiles in a component. Until you associate a tile with data, it displays sample data.

With a form as the data source for a tile:

- You can have up to 10 tiles per component (six by default).
- The values in the first column of the form (up to the 10th row) are used to create the tiles.
- By default, the row title in the form is the tile's title, and it gets its values from the first column, then by row.
- You can set the tile's component title, the tile's height percentage, legend labels, and can select which axes from the form to include. For example, if you select a form with three rows, the tile displays three values.

Note:

Sometimes in a form, the first column may be collapsed (hidden) when viewed as a grid. But the collapsed column is still considered when the tile gets its values from the form. We recommend that you update the form definition and use a form as a data source that contains only the cells to be shown on the tile.

With a cell intersection as the data source for a tile, you can have only one tile per object.

The table below lists the options you can set for the tile chart type. Note that you can set whether the displayed value is horizontally aligned in the tile to the left, the center, or the right. Also note that currency symbols or currency codes are displayed in tiles for multicurrency applications.

Table 13-14 Tile Chart Type Properties

Setting	Description
Value Scale	<p>Especially useful for large numbers, you can scale how a value is displayed. For example, if the value is 1,689,000 and you select K - Thousand as the scaling option, the chart displays the value as 1,689K.</p> <p>Scaling options:</p> <ul style="list-style-type: none"> • None: No scaling is applied. • Auto: The value is displayed based on its range. For example, 1,500 displays as 1.5K, 1,689,000 displays as 1.69M, 42,314,531,211 displays as 42.31B, and 1,234,567,891,234 displays as 1.23T. • K - Thousand: The value is displayed as thousands units. For example, 1,689,000 displays as 1689K. • M - Million: The value is displayed as millions units. For example, 123,456,789 displays as 123M. • B - Billion: The value is displayed as billions units. For example, 12,345,678,912 displays as 12B. • T - Trillion: The value is displayed as trillions units. For example, 1,234,567,891,234,567 displays as 1,234T.
Align Text	<p>Text alignment options:</p> <ul style="list-style-type: none"> • Left • Center • Right
Count	The number of tiles displayed in the component (up to 10)
Display	<p>Legend display options:</p> <ul style="list-style-type: none"> • Row and Column Dimensions • Row Dimensions • Column Dimensions • None
Position	<p>Legend positioning options:</p> <ul style="list-style-type: none"> • Left • Right • Top • Bottom
Legend Font Size	Decrease or increase the legend font size.
Value Font Size	Decrease or increase the value font size.

 **Note:**

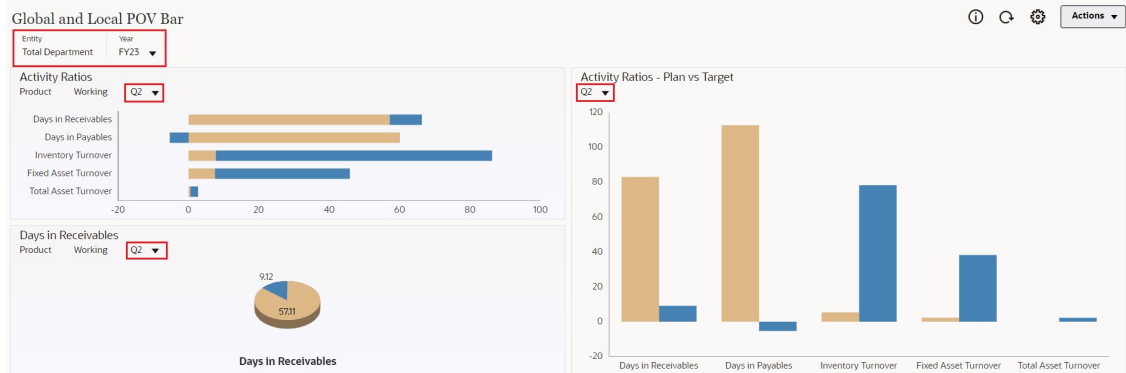
Dashboard 2.0 does not support cell details. Instead we recommend you use Quick Analysis as a data source, which is a more advanced version of cell details. If you convert a dashboard to Dashboard 2.0 that has a component using cell details, delete the component using cell details as a data source, and recreate it using Quick Analysis as a data source.

About Global and Local POVs in Dashboard 2.0


A local POV on a form reflects the dimension members the form designer selected for that form. Dashboards also support *global POV bars*, so that the local POVs that are common are combined in the global POV bar to avoid repeating them in each component.

Dashboard 2.0 POVs Example

This Dashboard 2.0 dashboard shows a global POV bar (showing Entity and Year) and local POVs (the drop-down lists for Q2):



With a global POV bar, if you change a page in the global POV bar and **POV Bar : Auto-Apply** is enabled, the page changes for all components in the dashboard that are based on forms. The global POV bar displays at the top of the dashboard above all the components, while the local POV bar displays within the component. User variables are supported in both global and local POVs in dashboards and you can change dynamic user variables directly from the POV bar.

In the dashboard toolbar  **POV Settings** menu (in both the runtime and edit modes), you can set whether to hide dimension labels in the global POV (**POV Bar : Hide Dimension Labels**) and whether to enable or disable automatically applying changes (**POV Bar : Auto-Apply**).

About global POV bars:

- The POV Bar is made up of local POV dimensions, Page dimensions, and user variables.
- Depending on the local POV and page of each form on the dashboard, the global POV bar is automatically calculated.
- Global POVs reflect the content of the components using forms in that dashboard. That is, they apply to forms in a dashboard, to charts that are linked to forms, and to tiles that use forms as a data source. So if the dashboard doesn't include a form as a data source, then neither the local nor global POV bar is available.

Here's an example of how the global POV bar is calculated, based on the local POV dimensions for two forms:

The global POV bar is disabled:

- Form A local POV: Year, Entity, Product
- Form B local POV: Year, Entity, Project

The global POV bar is enabled:

- Global POV bar: Year, Entity
- Form A local POV: Product
- Form B local POV: Project

Because not all dimensions and page selections may be common to all forms on a dashboard, the complete POV for a dashboard component may get split between the local POV and the global POV bar. The global POV bar and the local POV together contain the complete intersection information for each form on a dashboard.

If there is only one component on the dashboard that uses a form as a data source, then the entire POV/page of the form is moved to the global POV bar.

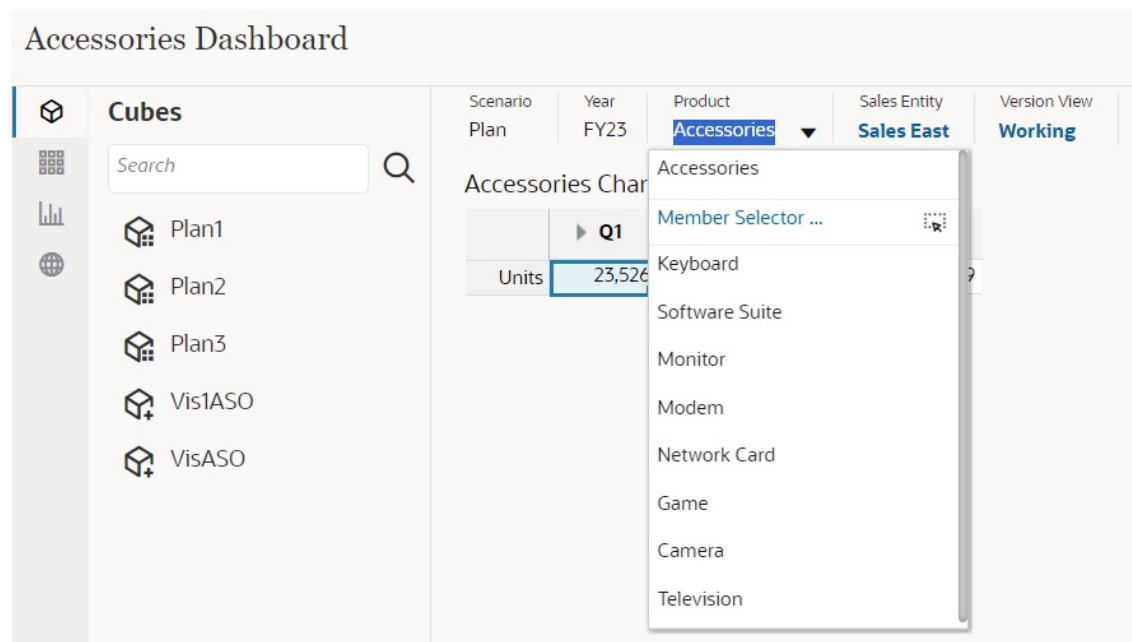
If there is more than one component on a dashboard that uses forms as a data source, then this is how the application determines which dimensions go in the global POV bar or stay in the local POV:

- If the dimension is in the POV or page of all the forms, and the member selection is the same in all the forms, the dimension goes in the global POV bar.
- If the dimension is in the POV on one form and in the page of another form, then the dimension stays in the local POV.
- If the dimension is in the POV, then the same members must be selected in all the forms for the dimension.
- If the dimension is a page dimension, then the selected page members must be the same and display in the same order in all the forms.

Searching for POV Members in Dashboard 2.0 Dashboards

When working in Dashboard 2.0 dashboards, you can easily find new POV members. To search, click a POV link. The search interface displays a list of the most recently used members from which you can choose.

Figure 13-1 Dashboard 2.0 POV Most Recently Used Members List




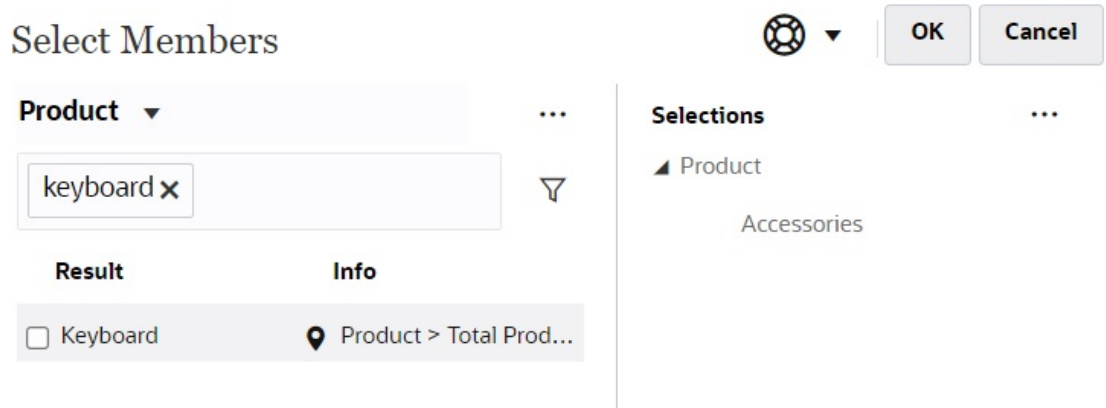
You also can search using the member selector. Click a POV link, then click the member selector icon  to launch the member selector. Members in the member selector are displayed as a hierarchy or you can type a member name in the **Search** box. If a member is located using the **Search** box, you'll see a result displayed under the Search box.

Figure 13-2 Dashboard 2.0 Member Selector Search Results




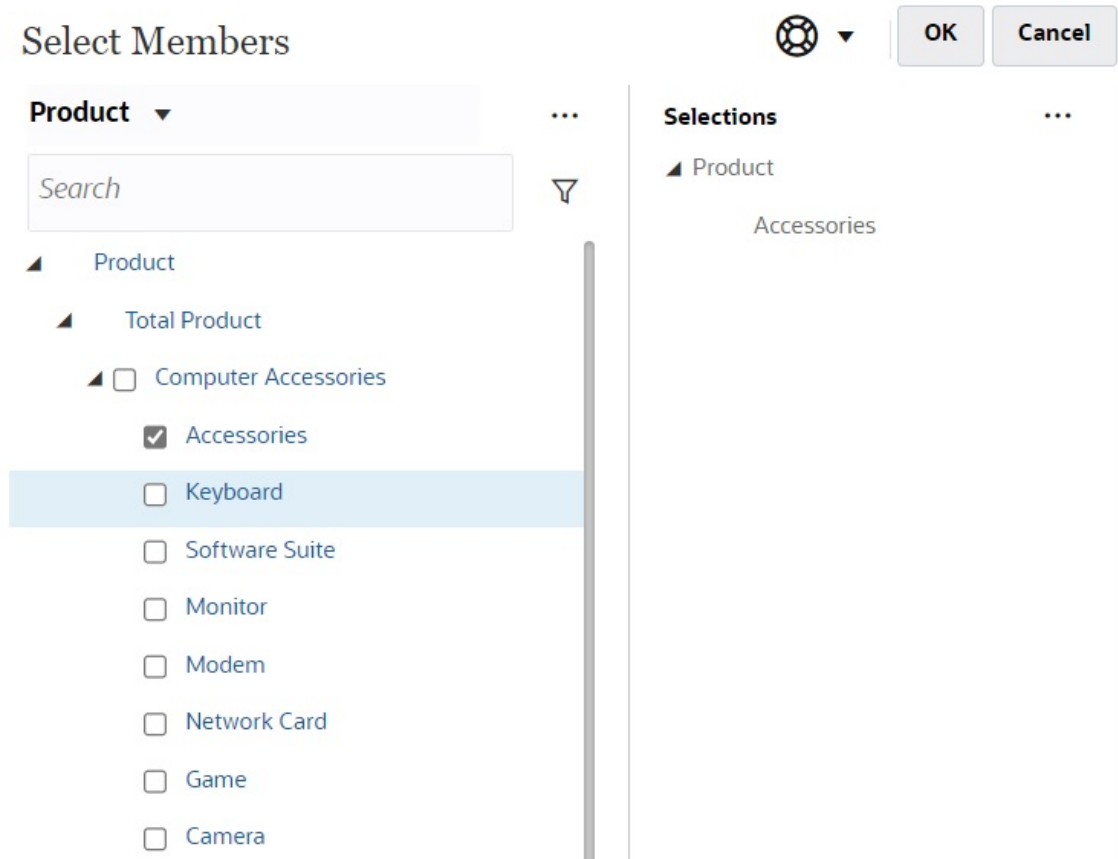
You can view where the member is located within the hierarchy by hovering over the result's **Info** column and clicking .

Figure 13-3 Dashboard 2.0 Member Selector Search Results in Hierarchy




Dashboard 2.0 POV Bar Considerations

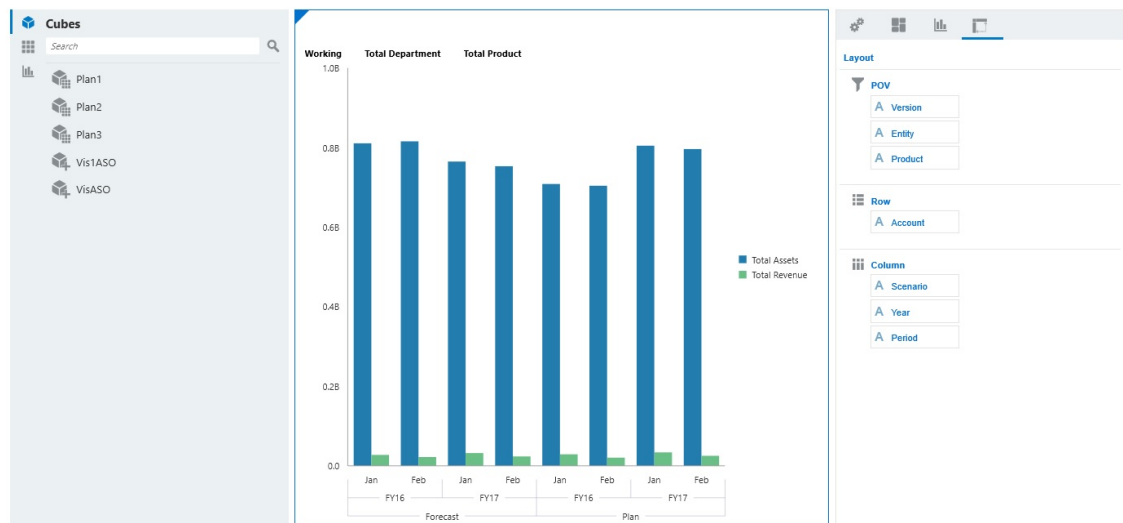
- For POV bar Page drop-down lists, the number of members shown in the page drop-down is controlled in **User Preferences** under **Page Options**. (From the Home page, click **Tools**, then **User Preferences**, and then click **Display** to view the **Page Options**.) If the number of items in the page drop-down exceeds this limit, then users cannot view them. Note that this will be fixed in a future release with the ability to use the member selector to browse through the rest of the members, similar to Dashboards 1.0.
- If your dashboard includes multiple forms, but some forms have different properties for the same dimension; for example, the Version dimension is hidden on some forms but it's visible on other forms in the same dashboard, the global POV might not display any Version dimension members. We recommend you ensure that all properties for all dimensions are the same for all forms included within a dashboard.

About Quick Analysis

Quick Analysis lets you add components to dashboards without having a prebuilt form. You create an ad hoc query by typing member names in the Search bar or using the Member

Selector, and then you control the layout of the query in the Layout tab  of the Properties panel.

Example Dashboard 2.0 Quick Analysis Chart in Design Mode




To create a quick analysis in your dashboard:

1. Select a cube for the query. You can do this in one of two ways:
 - Click in the workspace Search box to display a list of cubes, then select a cube.
 - Drag and drop a cube from the object palette to the dashboard workspace.

 **Note:**




With either method, the system starts with a default query; a single intersection in the cube driven from your Most Recently Used, or MRU. The default query varies based on what you've recently been looking at in the cube.

If the MRU intersection in the cube is invalid, you'll get an error. If you see an error, open another form and change the page to a valid intersection so that the MRU gets updated with a valid intersection.

2. Refine the query by specifying members for the query:
 - In the Search box, type member names to display an auto-complete list from the cube.
 - Launch the member selector  to select members, and then click **OK**.

 **Note:**

When using the Search box to find members for quick analysis and more than 25,000 members are present in a cube, the Search box only searches the first 3000 members in the dimension for the cube. If the cube contains less than 25,000 members, then the Search box will search through all members. To search a cube with more than 25,000 members, launch the member selector to make your quick analysis selections.

3. Select a chart type for the query.
Click  to select a chart type; for example, Bar .
4. In the Properties panel, click the Layout tab .
5. Drag and drop the dimensions in the Layout tab of the Properties panel to other sections of the Layout tab to change the POV, Row, and Column layout of the dashboard component.

Videos

Your Goal

Discover how to add quick analysis components to dashboards without having a prebuilt form. You learn how to create an ad hoc query in the Dashboard Designer and format the results by changing the dimension layout and applying visualizations.

Watch This Video



[Creating Quick Analyses in Dashboards 2.0](#)

14

Designing Infolets

Create infolets to allow users to view and interact with high-level, essential information from different sources. This helps them quickly assess where to direct their attention.

Related Topics

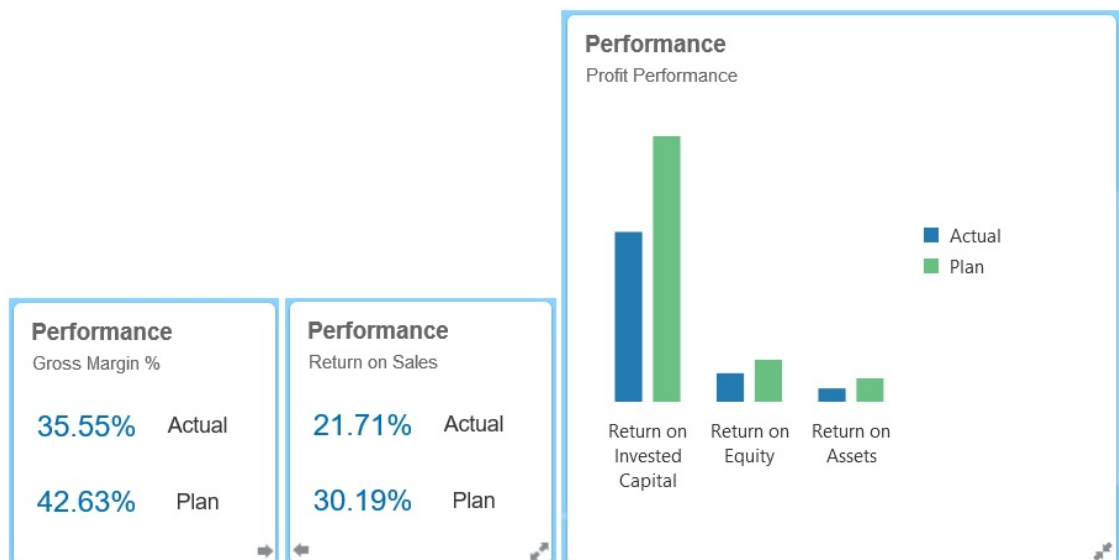
- [About Infolets](#)
- [Anatomy of an Infolet](#)
- [Determining Infolet Content](#)
- [Using the Infolets Designer](#)
- [Creating Infolets](#)
- [Working with Infolets](#)
- [Customizing the Interface to Access Infolets](#)

About Infolets

Infolets enable users to view and interact with high-level, essential information generated from different sources so that they can quickly assess where to direct their attention. Service Administrators create, redesign, delete, and assign permissions to infolets.

What is an Infolet?

An infolet is a self-contained, interactive box-shaped container used to display information using text and charts. Infolets are interactive and use progressive disclosure to display high-level, aggregated, essential information for quick consumption at a glance, and then can be acted upon as needed. Infolets can be flipped and resized to display up to three charts or sets of values.



For more information about infolets, see [Anatomy of an Infolet](#).

How Can I Use Infolets?

Use infolets to:

- Promote essential, easily consumable information
- Provide answers to your most critical questions:
 - What is new or what has changed?
 - What is the most important information that supports my work?
- Group key information by user role in a way that helps users quickly assess and prioritize their work
- Progressively display essential details and actions

Display these additional details in the various infolet views accessed by flipping or expanding an infolet. However, a single infolet view is acceptable.

- Provide a visually rich means of displaying essential or summary information

Do not use infolets to feature highly complex information, such as reporting functions, or to present detailed visuals.

See [Determining Infolet Content](#).

What is an Infolet Page?

An infolets page is a page that contains one or more infolets. It houses a container that manages the space occupied by the infolets and rearranges them depending on the size of the browser and the size of the infolets. Each infolet you create belongs to an infolet page. The **Infolets** card on the Home page provides a list of infolet pages.





Note:

Not all features pictured in the preceding image are supported in this update. Oracle plans to support these features in a later update.

See [Working with Infolets](#).

Videos

Your Goal

Learn how to design infolets.
Learn how infolets give different users and groups quick, functionally-tailored access to the key data that they need to prioritize their immediate activities and guide their decision making.

Watch This Video



[Overview: Creating Custom, Interactive Views of Key Data in Planning Using Infolets](#)

Anatomy of an Infolet

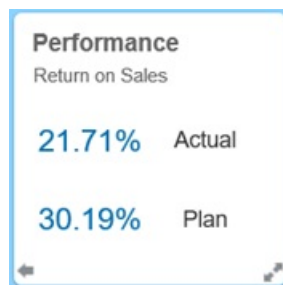
Infolet Views

An infolet supports up to three views:

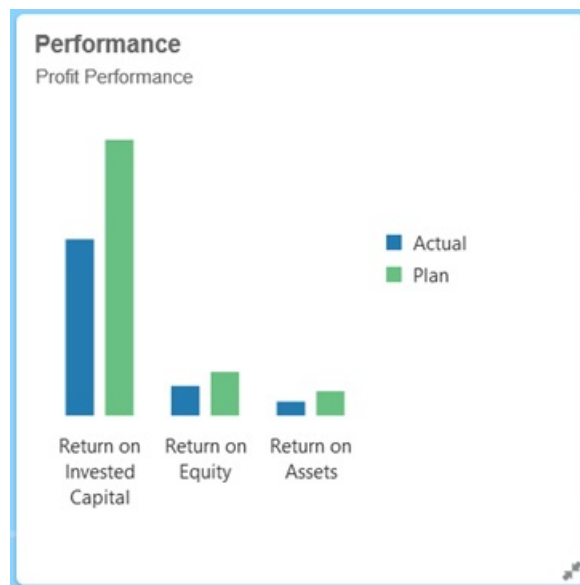
1. Front view (required)



2. Back view (optional)



3. Expanded view (optional)



The front view is required, and:

- Provides a quick look or glimpse at high-level information that has a direct effect on your work; for example, the front view can display status, counts, totals, or the most recent updates
- Promotes a glancing action that helps you identify important information that you may want to explore a bit more
- Uses all infolet sizes except 3x2 (see information about infolet sizes below)
- Returns the expanded view to its original size in the front view or back view
- Includes an Actions menu icon available only on hover and either a (optional) flip to back icon or an expand icon in the lower-right corner

 **Note:**

If only one view is presented, it must be a front view.

The back view is optional, and:

- Presents analytical information (for example, a graph)
- Promotes a scanning action that helps you explore or become more familiar with the information represented on the front view
- Is sized the same as the front view
- Includes an Actions menu icon available only on hover, a flip to front icon in the lower-left corner, and an (optional) expand icon in the lower-right corner

The expanded view is optional, and:

- Presents even more detailed information about the single data point or interdependent data set presented in the front and back views; for example, the expanded view can display more details about an object or a list of recent items than what's displayed on either the front or back view

- Provides enough information to help you decide if you're ready to take action and move to a focused context on a work area page
- Transitions smoothly from other views. You see a smooth, seamless expansion, as one infolet pushes others into new positions.
- Must be sized bigger than the front or back views
- Includes an Actions menu icon available only on hover, and a collapse icon in the lower-right corner

Infolet views honor the access permissions assigned to the underlying forms and dimensions. Therefore, the same infolet may display varying views from user to user if they have different access permissions.

Infolet Sizes

Infolets can be sized as follows:



Note:

1x1 refers to a box that spans one column and row width (170 pixels).

- 1x1
- 2x1
- 3x1
- 2x2
- 3x2 (expanded view only)

The size of the front and the back views are always the same. Changing the size of the front view will automatically reset the size of the back view. Because the size of the expanded view must always be greater than the size of the front/back views, if the size of the front/back view of an infolet is enlarged, the expanded view automatically resets to a larger size than the front/back view.



Note:

Front and back views cannot use the 3x2 size. This size is applicable for the expanded view only.

The size, title, and subtitle of a view is set by the designer in the properties panel. See [Using the Infolets Designer](#).

Navigating Between Infolet Views

An infolet can be created with one of the following view combinations:

1. Front view only
2. Front and back views
3. Front and expanded views
4. Front, back, and expanded views

Switching from one view to another is controlled by clicking a flip icon, an expand icon, or a collapse icon available in the bottom-right or bottom-left corner of the infolet. Hovering your cursor over the bottom corners reveals a flip, expand, or collapse icon.

Determining Infolet Content

Consider the following general tips when determining infolet content:

- Look to existing dashboards and work area pages.

Dashboards and work area pages are excellent starting points because they display collections of information summaries.

- Apply the 10/90/90 principle.

Seek out the most essential, easily consumable information that addresses frequently asked questions garnered from the top 10 percent of use cases. These use cases can come from across your enterprise—from business intelligence, social, transactional, external, and so on.

Then focus this information to reveal what 90 percent of your users would benefit from viewing 90 percent of the time. You can apply this 10/90/90 percent principle to existing dashboard content, to existing work area page content, or generally, to percolate eligible information for an infolet.

- Restate your top use cases in the form of frequently asked business questions.

Present the corresponding infolet content in such a way as to answer these business questions; for example, how many orders are in jeopardy, listed by status?

- Look for one point or a tightly related, interdependent set of points, instead of multiple points of information.

The process of determining content for an infolet is similar to the process that is used to yield dashboard content—but to a deeper level of analysis. Look for information within a data point or data set that is suitable to be displayed in no more than three views of information hierarchy and that answers a critical business question.

- Start with the single most important point.

An infolet displays aggregated information about a single data aspect or point of information in relation to an event that the user needs to know about or a task that the user needs to address.

If a dashboard contains multiple aspects about one or more objects (for example, numeric totals and currency totals), start with the single most important point and add that as a simple overview (for example, as a total using a stylized numeric value) to the front view of an infolet. Then determine the content for the back view, if needed. Finally, determine the content for the expanded view, if needed.

An infolet should have no more than three views. If there is only a single data point or only one tightly related, interdependent data set to display on an infolet, use only the front view.

Related Links

[Designing Forms for Infolets](#)

[Designing Charts for Infolets](#)

Designing Forms for Infolets

Use only forms with small data sets in infolets. Permissions that are set for forms are honored in infolets.

You can create forms that are specifically used in infolets:

- Forms used in infolets should have fewer cells than a traditional data entry form; for example, forms used in infolets should only have up to 12 cells.
- Forms used in infolets should have no more than 12 rows and columns. If a form has more than 12 rows and columns, the infolet will only display the first 12 rows and columns.
- Infolets currently don't support Page dimensions or POVs, therefore forms used in infolets should not contain Page dimensions.
- If a form that is used in infolets contains a grid with members that expand, the infolet will display all the members in the form, including the expanded members.

Designing Charts for Infolets

Use the title and subtitle in charts to show static context.

There are six types of charts that you can use in infolets:


- **Bar:** Displays a graphical summary of multiple data values for comparison purposes. Bar charts can be plotted vertically or horizontally. Up to eight bars are recommended for bar chart infolets.
- **Column:** Displays stacked bars that represent different data sets on top of each other. The height of the resulting bar shows the combined result of the data sets.
- **Doughnut:** A circular graph which is divided into segments to compare data sets to one another. The blank center displays the sum of all data sets. Up to six segment values are recommended for doughnut chart infolets.
- **Line:** Use to visualize a trend in data over intervals of time.
- **Pie:** A circular graph which is divided into slices to compare data sets to one another. Up to six slices are recommended for pie chart infolets.
- **Tile:** Lets you select specific values from a data set to display. No more than three values are recommended for tile chart infolets.

Note:

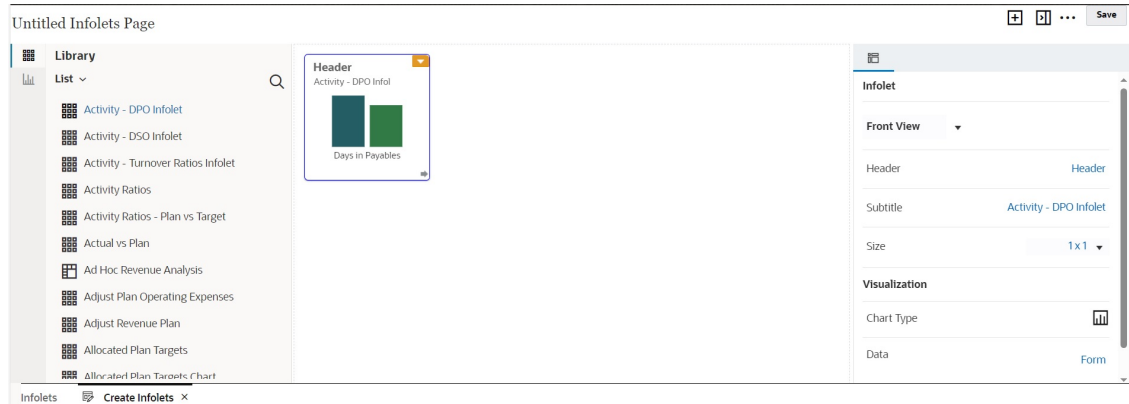
Tile charts can only use the 1x1 size. You cannot resize an infolet using the tile chart until the chart type is changed. If you drag and drop a tile chart to an infolet that is greater than 1x1, you will be prompted to change either the size of the infolet or the chart type.

Using the Infolets Designer

Service Administrators use the Infolets Designer to create infolets and infolet pages. The Infolets Designer enables easy toggling between runtime and designer views. To access the Infolets Designer, launch the **Infolets** icon on the Home page and click **Create**, or click the


Actions icon next to an infolets page in the listing, and then click **Edit**. Clicking the infolet name in the listing, launches the runtime version of the infolet page. You can toggle from runtime view to designer view by clicking .


Infolets Designer



Infolets Toolbar


On the upper right is the Infolets Toolbar.

 : Adds a new infolet to the Infolets Designer

 : Hides and unhides the Properties panel

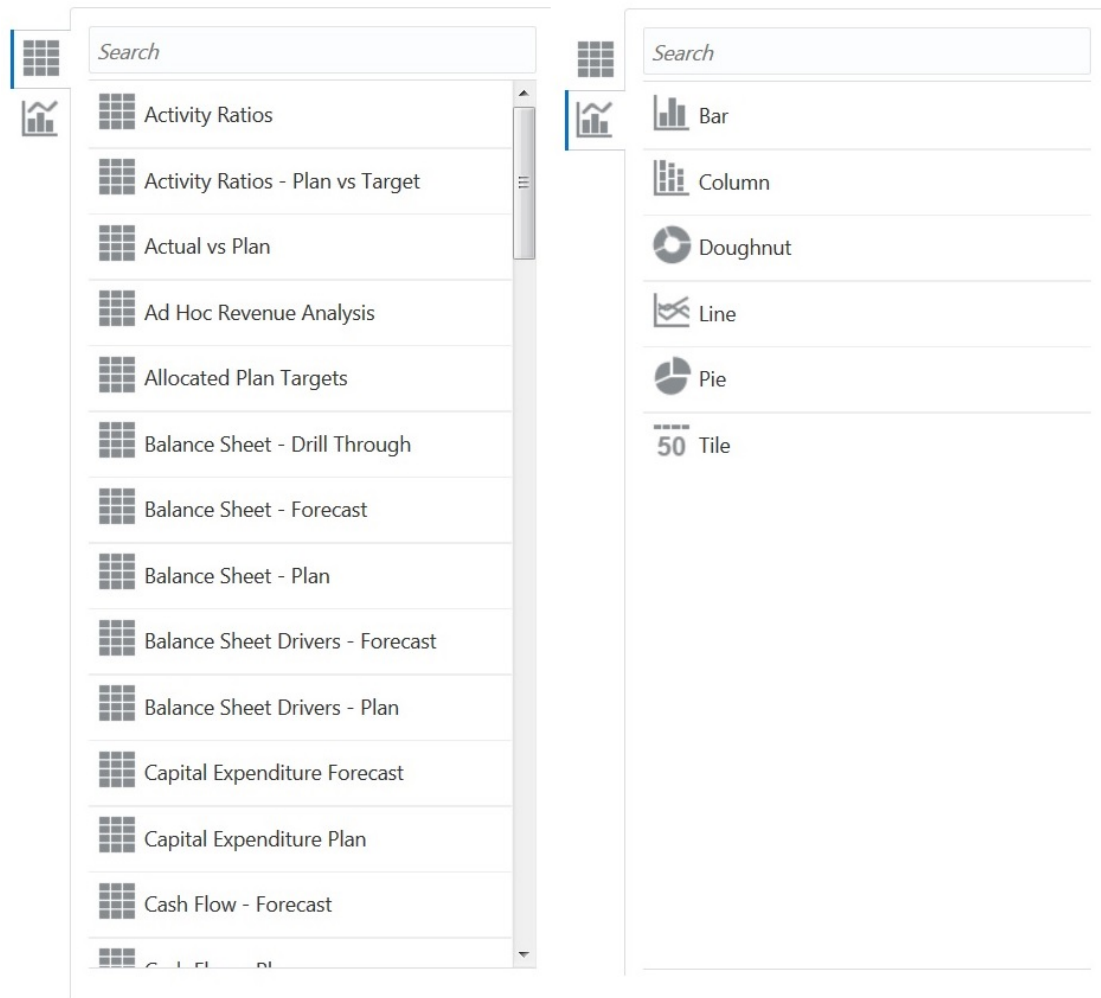
... : Click to perform these actions:

- **Reset:** Resets the Infolets Designer to a previously saved state
- **Refresh:** Refreshes the data from Essbase and updates the infolet definition from the database
- **Runtime:** Hides all Infolets Designer elements and displays the infolet as it would appear to users during runtime

 : From runtime mode, displays the Infolets Designer

Infolets Designer Palette

On the left is the Designer Palette. The Designer Palette has two tabs: Forms and Chart Types. Highlight objects in the Designer Palette and then drag and drop them onto the drop zone.



Designer Palette objects:

- Forms: Select forms to include in the infolet by scrolling through the forms or by searching for them by name. For details about forms, see [Designing Forms for Infolets](#).



Note:

The access permissions set for forms are honored in infolets.

- Chart Types: Select the chart types to include in the infolet. Infolets display sample data in the charts until you associate the chart with a form as its data source. When you link a chart to a form, users can see the impact of changing data in the form on the associated charts. To associate a chart with a form, highlight a chart and drag and drop it onto the drop zone, in the Properties panel, click **Sample**, and then click **Forms** to select the data source. For details about charts, see [Designing Charts for Infolets](#).

Infolet Menu

The infolet menu contains the infolet delete and clear actions. To view the infolet menu, hover over the upper right corner of the infolet, and then click the down arrow to display the menu options:

- **Delete:** Removes the infolet from the page
- **Clear:** Clears infolet details

Properties Panel

The properties panel on the right side of the Infolets Designer enables you view and work with these infolet properties:

Note:

The header you specify is the same for all views of an infolet, but you can specify a different subtitle for each view; for example, the front, back, and expanded views of an infolet can each have different subtitles, but they must have the same header.

- **Header**
- **Subtitle**
- **Size:** Displays the infolet in the selected size
- **Chart Type:** Displays the infolet data as the selected chart type
- **Data:** Displays the associated data source (Sample or Form)
- **Form:** Displays the selected infolet form

Actions such as delete and clear are on the infolet menu.

By default, the front view of an infolet is displayed in the properties panel. You can see the other views by selecting them from the drop-down. If you flip or expand an infolet to view the back or expanded views, the properties for those views display in the properties panel. In addition, the properties for the corresponding chart type are also displayed in the properties panel.

Creating Infolets

To create infolets:

1. From the Home page, click **Infolets**, and then click **Create**.
2. Click **Untitled Infolets Page**, and enter a title for the new infolets page you are creating.
3. From the designer palette on the left, choose either the **Library** tab or the **Visualizations** tab, highlight an object, and then drag and drop it onto the infolets drop zone.

Alternatively, you can click



at the top of the page to add a new infolet to the workspace.

4. If the **Properties** panel isn't already displaying, click



at the top of the page to reveal it. Customize the highlighted infolet using selections made in the **Properties** panel.

5. Click **Save**.

You can easily duplicate and modify an infolet using the **Copy As** action on the Infolet list page. From the list page, click the Actions icon next to the infolet you want to copy, and then click **Copy As**.

Working with Infolets

Once you've created an infolets page, it is displayed in the infolets listing on the **Infolets** card.

The listing page for infolets supports folders. Folders enable you to assign permissions to all infolets within a folder rather than assigning permissions to each individual infolet. The infolets listing page uses the same folder hierarchy as dashboards and data entry forms and all artifacts and folders reside under a root folder called **Library**.


Note:

Only administrators can add files (for example, dashboards, infolets, forms, reports, and so on) to the **Library** root folder.

To view and work with infolets:

1. From the Home page, click **Infolets**.
2. To work with infolets, perform an action:
 - On the listing page for infolets, you can toggle between viewing infolets by a flat view

or a tree view:  

Then you can search for infolets using **Search** . The flat view displays only the artifacts that meet the search criteria, not the folders that contain them. The tree (or hierarchical) view displays artifacts in the context of the folders that contain them.

To search on another keyword, clear the search criteria by clicking **X** in the **Search** box.

- To refresh the infolets listing, click **Refresh**.
- To create infolets, click **Create**. See [Creating Infolets](#).
- To perform the following actions on infolet pages, click the **Actions** icon next to the infolet page, and then select:
 - **Create Folder**: Creates a folder in the listing
 - **Edit**: Opens the infolet page in the Infolets Designer
 - **Rename**: Renames the infolet page
 - **Copy As**: Duplicates an infolet page
 - **Delete**: Deletes the infolet page from the listing
 - **Move To**: Moves an infolet page to another folder
 - **Default** or **Unmark**: **Default** marks an infolet page as default and makes it accessible directly from the Home page by clicking the second infolet dot that is displayed beneath the global header on the Home page. Only one infolet page can be marked as default, and a "(Default)" prefix displays before the name of that infolet in the listing. **Unmark** removes the default designation from the infolet page.

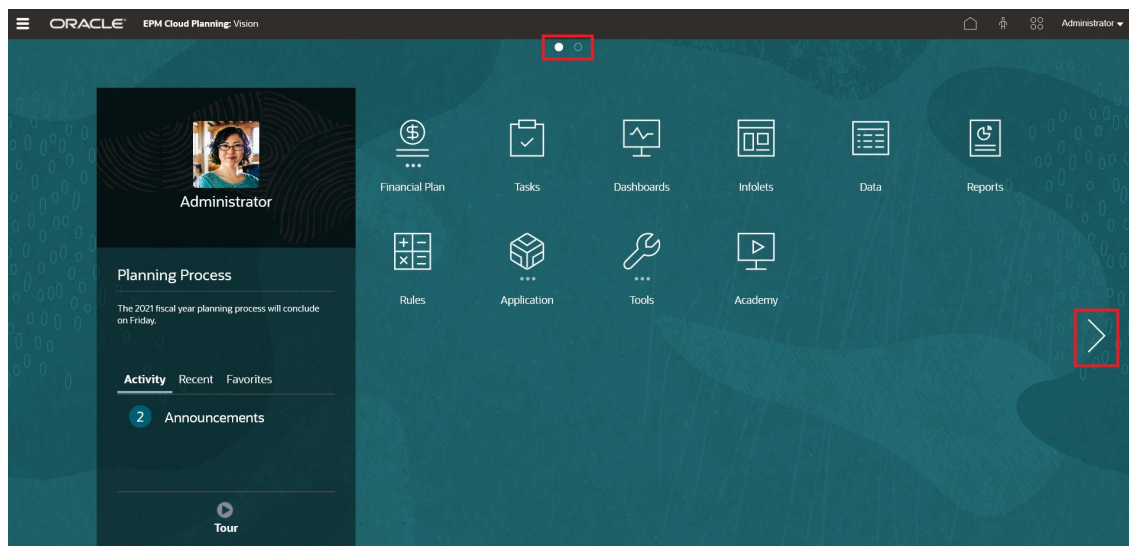
 **Note:**

You can no longer mark a dashboard page as default. Only an infolet page can be marked as default.

- **Assign Permission:** Enables you to assign Read, Write, and None access permissions to infolet pages and folders for individual users or groups

Customizing the Interface to Access Infolets

You can customize the business process interface to add links to infolet pages from the Home page using the Navigation Flow Designer. When you customize your interface to access infolet pages, dots will appear on the Home page beneath the global header and arrows will display to help you navigate easily between the Home Page and infolet dashboard pages. Each dot that appears on the Home page represents an infolet page and hovering over each dot displays the name of the infolet page. Clicking an infolet dot launches the infolet page associated with that dot. You can define up to seven infolet dots on the Home page. If you've created connections to other EPM Cloud environments, you can also add links to infolet pages in other EPM Cloud environments.





Users will only see dots displayed on the Home page for infolet pages to which they have access. The types of infolet dots displayed are as follows:

- **Home dot:** This dot always appears first and it links to the Home page. There can only be one home dot. If you are not viewing the Home page, clicking the home dot will bring you back to the Home page.
- **User dot:** Links to an infolet page marked by an end user as the default infolet page. There can only be one user dot and it always appears after the Home dot on the user's Home page. User dots cannot be added using the Navigation Flow Designer. For more information about marking an infolet as the default, see [Working with Infolets](#).
- **Customizable dot:** Links to infolet pages created by Service Administrators. Customizable dots can be integrated into navigation flows and their visibility and the order in which they

appear is determined by the navigation flow designer. There can be up to seven customizable dots and they always appear after the home and user dots.

To add infolet dots to your business process interface using the Navigation Flow Designer:

1. From the Home page, click **Tools**, and then click **Navigation Flows**.
2. Select an inactive navigation flow in the listing, and then click the **Infolets** tab on the Navigation Flow Designer.
3. Click .
4. In **Manage Infolet**, name the infolet dot, set visibility, and then click  to select an infolet in the Artifact Library.

 **Note:**

You can select an infolet from another EPM Cloud environment if you've created connections to other environments. First select the environment under **My Connections**, and then navigate to the infolet in that environment.

5. Click **Save and Close**.

 **Note:**

Infolets can also be associated with a tab or a card in a navigation flow. While adding or updating a tab or a card, select an infolet in the Artifact Library.

To view design time changes to the navigation flow, activate the navigation flow, and then from the Home page, click the down arrow next to the user name (upper right corner of the screen) and click **Reload Navigation Flow**.

To learn more about designing navigation flows, see [Designing Custom Navigation Flows](#).

To learn more about connecting EPM Cloud environments and for information about the **Copy URL** feature, see [Connecting Environments in EPM Cloud](#).

Configuring IPM

Use Intelligent Performance Management (IPM) to inform your planning decisions with predictive capabilities. IPM includes Auto Predict, IPM Insights, and Machine Learning Model Import.

Related Topics

- [About IPM](#)
Oracle EPM Cloud provides Intelligent Performance Management—IPM—integrated directly in your Planning applications to inform your planning decisions with predictive capabilities and accelerate insight discovery with financial pattern recognition.
- [About IPM Insights](#)
IPM Insights empowers finance and operational users with data science optimized for multidimensional planning and forecasting use cases.
- [About Using Calendars and Events in IPM Insights, Auto Predict, and Predictive Planning](#)
When defining IPM insights, Auto Predict predictions, and when running Predictive Planning from forms on the web, you can specify a calendar and events to associate with the prediction.
- [Configuring Calendars and Events](#)
You can define calendars and events to associate with a prediction to improve the accuracy of the prediction.
- [Configuring IPM Insights](#)
Configure IPM Insights to define the insights that planners see on the Insights dashboard.
- [Running and Scheduling Insights](#)
After configuring insights, you can run them any time. You can also set up a job to run insights at a regular interval, for example, when you have a new set of actuals.
- [Managing Insight Definitions and Generated Insights](#)
You can edit, delete, or duplicate existing insight definitions. Administrators can delete insights that have been generated.
- [Managing Tags](#)
You can collaborate with your colleagues more effectively and leverage the power of automated analysis with IPM Insights using tags.
- [Bring Your Own ML: About Machine Learning Model Import](#)
With Bring Your Own ML, EPM administrators can import a fully trained Machine Learning (ML) model and deploy it to a Planning application. Planners can then leverage robust, ML-based forecasting that uses advanced predictive modeling techniques to generate more accurate forecasts.
- [Considerations for Bring Your Own ML](#)
- [Importing an ML Model](#)
Import a fully trained ML model into a Planning application to prepare it for use by business users.
- [Deploying an ML Model to Planners](#)
Deploy an imported ML model to make it available to planners on forms and dashboards. Planners can use machine learning to generate a prediction.

About IPM

Oracle EPM Cloud provides Intelligent Performance Management—IPM—integrated directly in your Planning applications to inform your planning decisions with predictive capabilities and accelerate insight discovery with financial pattern recognition.

Learn more about the Oracle EPM Cloud IPM offerings:

- **Auto Predict** enables you to jumpstart your planning process and improves the accuracy of your forecasts with powerful and automated predictive capabilities. See [About Auto Predict](#).
- **IPM Insights** reduces time spent in data analysis with financial pattern recognition that offers insights to planners, which they can evaluate and take action on. See [About IPM Insights](#).
- **Machine Learning Model Import** lets business users harness the power of data science by performing what-if analysis on a trained ML model that has been imported into a Planning application. See [Bring Your Own ML: About Machine Learning Model Import](#).

About IPM Insights

IPM Insights empowers finance and operational users with data science optimized for multidimensional planning and forecasting use cases.

IPM Insights analyzes past data and predicted data, helping you find patterns and insights into data that you might not have found on your own. Insights can be trends, anomalies, forecast bias, or variations. With IPM Insights, the insight discovery phase of the planning process is automated with data science and financial pattern recognition, enhancing your forecast effectiveness. Using IPM Insights, you can analyze and explore data across any account. IPM Insights automates processing large amounts of multidimensional data, so that as new actuals come into the system, you quickly detect patterns in your data or hidden correlations, streamlining reporting, improving your forecasting, and strengthening your decision making. You spend less time in analysis, saving time in the overall planning process.

IPM Insights offers these benefits:

- Reduces time spent in data analysis.
- Minimizes hidden biases.
- Improves forecast accuracy and reliability, enhancing forecast effectiveness with informed decision-making.
- Encourages collaboration with your colleagues.
- Helps you detect trends early to enhance strategic decision-making.

IPM Insights provides three types of insights, using both historical and predicted data:

- **Forecast variance and bias insights** reveal hidden bias in forecasts submitted by planners by analyzing historical data. This type of insight measures the variance or bias between two historical scenarios such as Forecasts and Actuals, and calculates the percentage of risk associated with the current forecast. Forecast variance indicates the level accuracy of the forecasts submitted by planners. Forecast bias indicates the tendency of the direction of forecast error. For example, a tendency to forecast in excess of the actuals is called the over-forecasting bias; a tendency to forecast below the actuals is called the under-forecasting bias.

IPM Insights triggers an insight when either the variance or risk crosses the specified threshold.

- **Prediction insights** help you uncover significant deviations in forecasts compared to predicted values. This type of insight looks for variances between two future scenarios such as forecasts and computer-generated predictions, and can calculate a measure of risk, for example the risk of meeting a target forecast. By comparing a planner's forecast with a machine-generated prediction, prediction insights measure the variance as well as the presence of any hidden bias (a planner's tendency towards over-forecasting or under-forecasting).

IPM Insights triggers an insight when either the variance or bias crosses the specified threshold.

- **Anomaly insights** detect unusual patterns in data that deviate from expected results. This type of insight detects outlier values that vary widely from other values, for example, a sudden volatility in actuals compared to the base level, or missing actuals data. Anomalies can result from key business actions or they could contain valuable information about a hidden trend.

Anomalies in historical data can also result from events that historically led to spikes or declines in the data. You can choose to take these spikes or declines into consideration during predictions, so that historical spikes or declines are also reflected in future predictions.

IPM Insights triggers an insight when an outlier measure crosses the specified threshold.

To get started with IPM Insights, administrators configure insights and then run them, and can schedule them to run on a regular basis.

Planners can then review and analyze insights in a dashboard, and take appropriate action to improve the forecast.

Figure 15-1 Forecast and Bias Insight

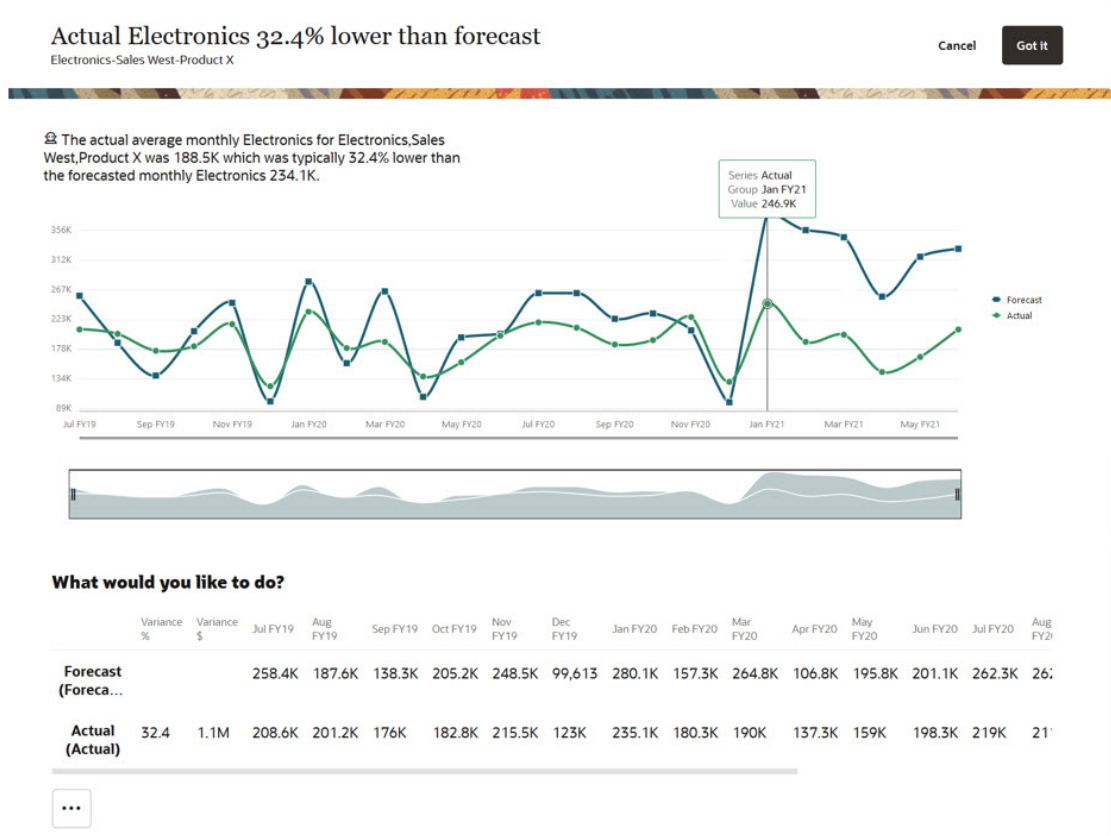


Figure 15-2 Prediction Insight

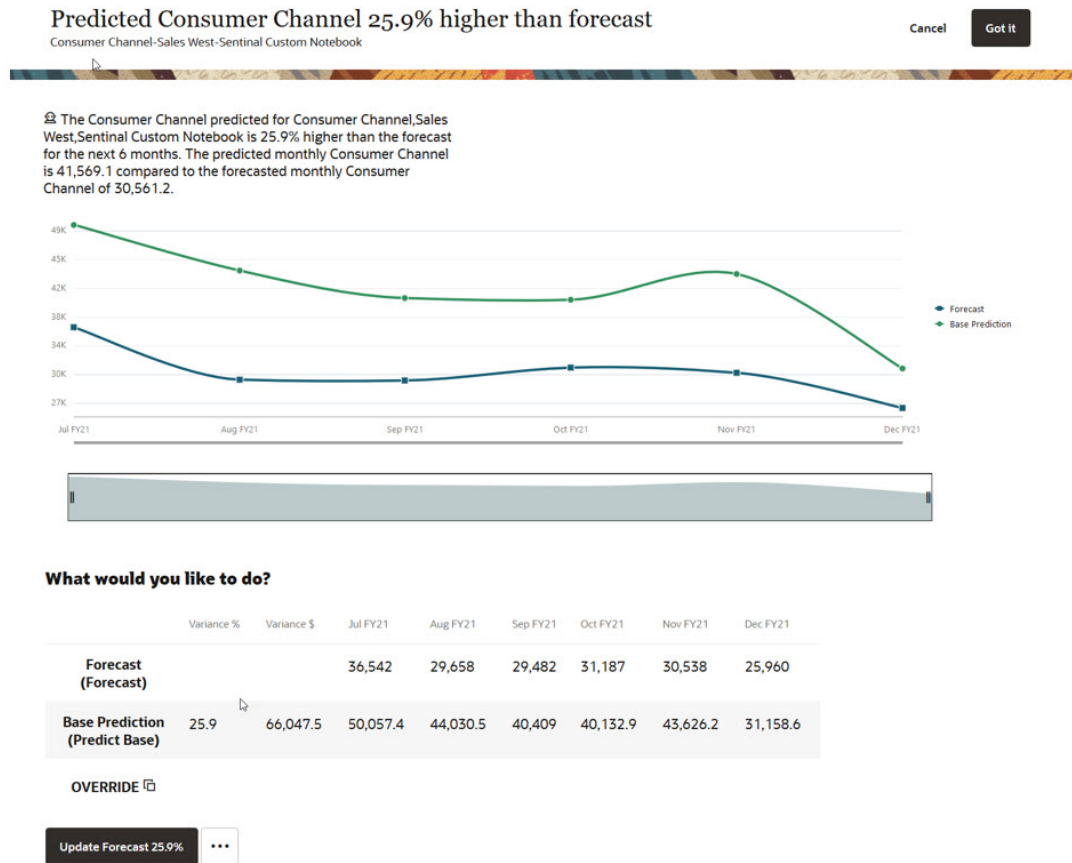
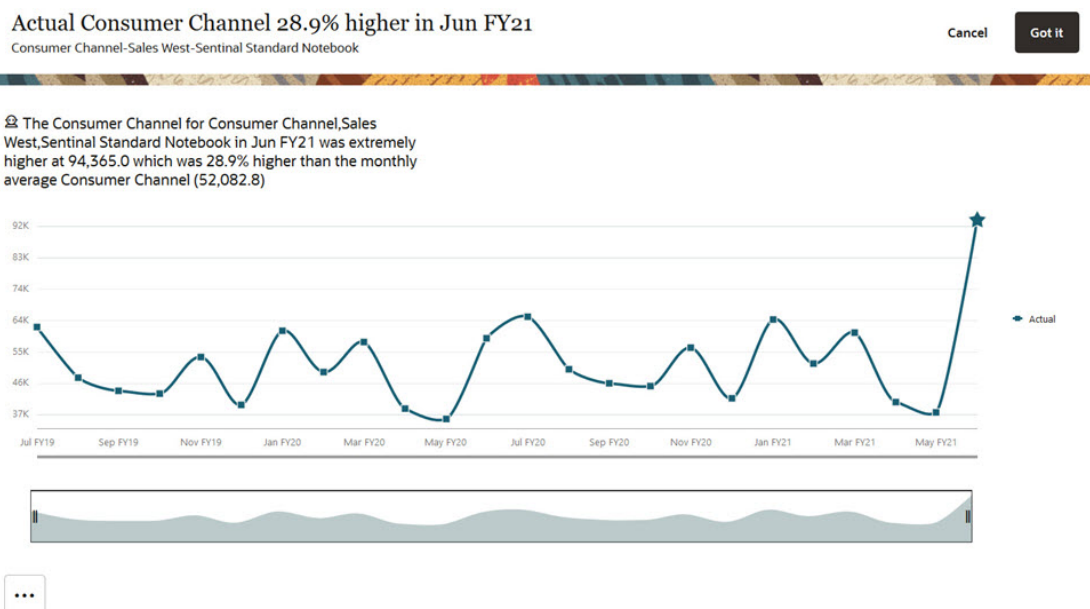



Figure 15-3 Anomaly Insight



Videos

Your Goal	Watch This
This overview introduces you to Insights. Insights empowers finance and operational users with data science optimized for multidimensional planning and forecasting use cases. Insights analyzes past data and predicted data, helping you find patterns and insights into data that you might not have found on your own. You can evaluate those insights and take action on them.	 Overview: Insights in Cloud EPM

Considerations for IPM Insights

The following are some of the considerations and best practices for leveraging the benefits of IPM Insights and Auto Predict.

Considerations:

- IPM Insights requires an EPM Enterprise Cloud service subscription.
- IPM Insights works with these Planning application types:
 - Custom
 - Modules
 - Sales Planning
 - Strategic Workforce Planning
 - Cash Forecasting
- You can use IPM Insights with Oracle Sales Planning Cloud and Oracle Strategic Workforce Planning Cloud.
- IPM Insights and Auto Predict are not yet available in FreeForm applications; this is on the roadmap.
- IPM Insights works only with applications with Hybrid Essbase enabled.
- IPM Insights is available only with Redwood Experience enabled. (Auto Predict does not require Redwood Experience to be enabled, except for configuring advanced Auto Predict options. Configuring advanced auto predict options is available only with Redwood Experience enabled.) For more information about Auto Predict considerations, see [Auto Predict Considerations](#).
- IPM Insights honors both member level security and cell level security, so planners see insights only for slices of data to which they have access. However, note that insights are not generated for a user when cell level security is defined on Year/Period dimensions.

IPM Insights Support Matrix

Review the table for a summary of the supported SKUs, business processes, and application types for IPM Insights.

Table 15-1 IPM Insights Support

SKU	Business Process	Application Type	Supported?	Comments
EPM Enterprise	Planning	Modules	Supported	<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
	Planning	Custom	Supported	<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
	Planning	Freeform	Not supported	
	Planning	Sales Planning		<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
	Planning	Strategic Workforce Planning		<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
		Predictive Cash Forecasting		<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
	Other business processes		Not supported	
Legacy SKU	Planning	Enterprise Planning and Budgeting Cloud	Not supported	
	Planning	Planning and Budgeting Cloud	Not supported	
	Other business processes		Not supported	
EPM Standard	Planning	Standard Module	Not supported	
	Other business processes		Not supported	
Sales Planning	Planning	Sales Planning	Supported	<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled
Strategic Workforce Planning	Planning	SWP	Supported	<ul style="list-style-type: none"> Hybrid Essbase must be enabled Redwood Experience must be enabled

Best practices:

- Historical Data:** Prediction results are more accurate the more historical data you have. There should be at least twice the amount of historical data as the number of prediction periods. For example to predict 12 months in the future, you should have at least 24

months of historical data. At the time of prediction, if there is not enough historical data available, a warning is displayed.

- **Time Granularity of Predictions:** Because the lowest Period dimension member level in an Insights job determines the time granularity of the prediction, create the Insights job using the lowest level of Period members possible so that the greatest amount of historical data can be used.

For more information about the statistical methods used in IPM Insights, see IPM Insights Metrics in *Working with Planning*.

About Using Calendars and Events in IPM Insights, Auto Predict, and Predictive Planning

When defining IPM insights, Auto Predict predictions, and when running Predictive Planning from forms on the web, you can specify a calendar and events to associate with the prediction.

Events are typically one-off or recurring events that historically led to spikes or declines in the data. You can choose to take these spikes or declines into consideration during predictions, so that historical spikes or declines are also reflected in future predictions. For example, a North American calendar might include an event for Christmas, or an APAC calendar might include an event for Diwali, when sales would typically spike. By including the historical data spikes in the prediction, you see the spikes in the predicted data, so you can plan ahead for volume or to make use of the opportunity.

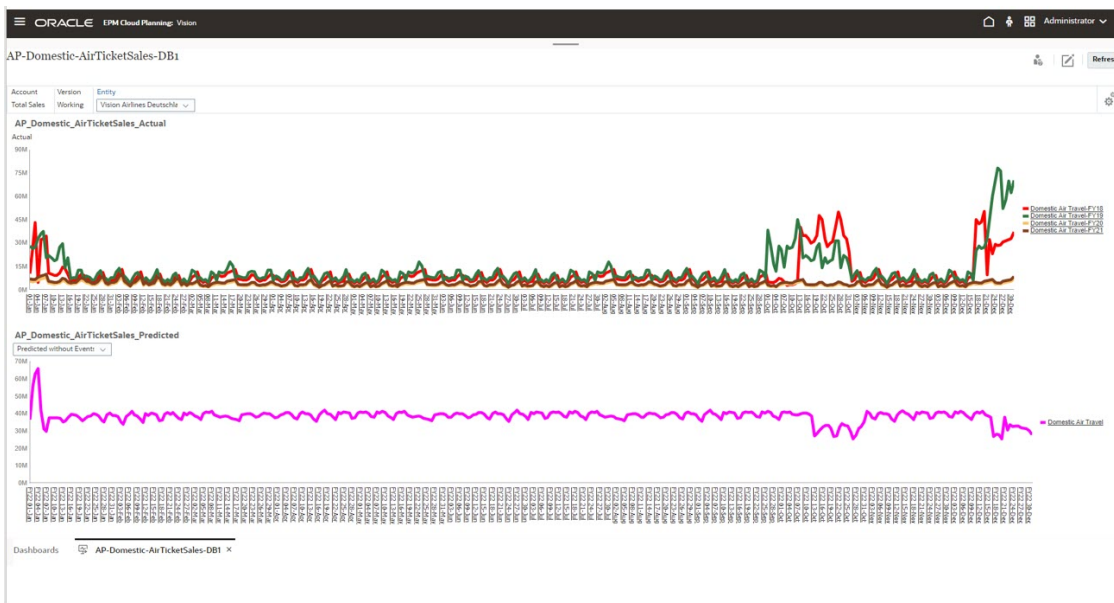
Without events, spikes or falls in data are normalized and distributed over the prediction period, potentially leading to less accurate predictions. Using events helps you plan ahead for the events and take advantage of opportunities by allowing you to see anticipated spikes and falls in the predicted data for specific events. Using events with IPM Insights, Auto Predict, and Predictive Planning simplifies predictions and significantly improves the prediction accuracy for complex and volume based industry verticals such as air travel, public transportation, retail, E-commerce, brick and mortar stores, FMCG, and automobiles.

Alternatively, you can choose to skip the historical data spikes or falls, so that the data for the event is completely excluded from the prediction.

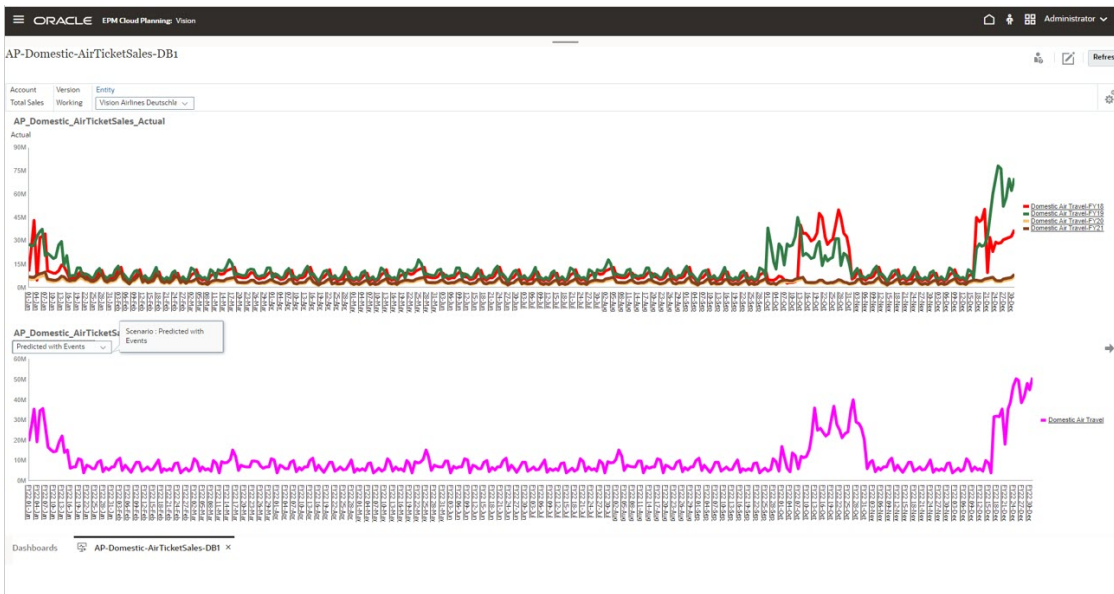
If you want to associate calendars and events with insight definitions and Auto Predict prediction definitions, configure calendars and events first. See [Configuring Calendars and Events](#).

These dashboards illustrate the effect of including events in the prediction.

In this example, the upper chart shows the historical data, which includes several spikes. The lower chart shows the prediction results without events. Notice that the predicted data is spread and normalized so that there are no spikes.



In this example, the upper chart shows the same historical data, which includes several spikes. The lower chart shows the prediction results with events. Notice that the spikes are evident in the predicted data. In this example, using events significantly improves the prediction accuracy.



To use calendars and events with IPM Insights and Auto Predict:

1. Define calendars.
2. Define events.
3. When configuring an IPM Insights job or an Auto Predict prediction definition, associate a calendar with the insight or Auto Predict job. Then, select whether to include events in the prediction.

For details on these procedures, see [Configuring Calendars and Events](#) and [Configuring IPM Insights](#).

Events and calendars are also available in non-Redwood themes for use with Auto Predict and Predictive Planning in forms and for Auto Predict users without access to IPM Insights, such as legacy non-Enterprise SKU users.


You can use calendars and events with Predictive Planning on forms.

- When designing a form, use **Prediction Options** on the Form Designer Layout tab to specify a calendar to associate with the prediction for the form, and to select whether to include events in the prediction by default. This selection is saved with the form, so it is the default option for all users of the form. See [Setting Prediction Options](#).
- When running a prediction from a form, planners can use the **Settings** option to select a calendar to use for the prediction and whether to include events in the prediction. They can use the **Chart Settings** to specify whether to show events on the chart, and can also choose to exclude Skip events. Changes to these settings are for the current user session. These settings revert to defaults for each new login session. See [Predicting Future Values Based on Past Performance in Working with Planning](#).

Notes about calendars and events:

- Defining events and calendars is optional.
- Events are available only on the web, not in Oracle Smart View for Office. Because events aren't supported in Smart View, if you run a prediction on a web form that includes events, and then you open the same form in Smart View and run a prediction, you might see different prediction results on the web and in Smart View.
- You can use calendars with each insight type and with Auto Predict. Events are an option for the Anomaly insight job type and Auto Predict.
- Events and calendars are available in non-Redwood themes for use with Auto Predict and Predictive Planning in forms and for Auto Predict users without access to IPM Insights, such as legacy non-Enterprise SKU users.

Videos

Your Goal	Watch This Video
This video introduces you to how to include events into your prediction process. Considering events when running predictions improves the accuracy of the predictions and helps you plan well in advance for the impact on sales or volume demand caused by events. By incorporating seasonal, cultural and other types of events, you can take advantage of opportunities that allow you to see anticipated spikes and falls in the predicted data for those specific events. Historical spikes or declines due to events are also reflected in future predictions.	 Introduction to Predicting with Events in Cloud EPM Planning

Configuring Calendars and Events

You can define calendars and events to associate with a prediction to improve the accuracy of the prediction.

To use calendars and events with IPM Insights and Auto Predict:

1. Define calendars. From the Home page, click **IPM**, then click **Configure**, and then click the **Calendar** tab. See [Defining Calendars](#).

2. Define events. From the Home page, click **IPM**, then click **Configure** and then click the **Events** tab. See [Defining Events](#).
3. When configuring an IPM Insights job or an Auto Predict prediction definition, associate a calendar with the insight or Auto Predict job. Events are an option for the Anomaly insight job type and Auto Predict. See [Configuring IPM Insights](#) and [Creating Auto Predictions for Forecasts](#).

Events and calendars are also available in non-Redwood themes for use with Auto Predict and Predictive Planning in forms and for Auto Predict users without access to IPM Insights, such as legacy non-Enterprise SKU users:

1. From the Home page, click **Application**, then click **Overview**, and then from the **Actions** menu, select **Auto Predict**.
2. From the **Actions** menu, select **Calendar** to define calendar or select **Events** to define events. See [Defining Calendars](#) and [Defining Events](#).

Defining Calendars

A calendar defines the scope and range of the time series for selected cubes. For example, you can create a daily calendar, a weekly calendar, and an alternate calendar. You might want to create a calendar for a specific entity, because not all events are applicable to all entities. For example, Diwali applies to APAC and Thanksgiving applies to North America, so you can create an APAC calendar with its own events and a North America calendar with its own events.

You can use calendars on their own to quickly set up the time frame for insight and prediction definitions, or use calendars with events.

To define calendars:

1. On the **Calendar** tab, click **Add Calendar**.
2. Enter a name and description for the calendar.
3. From the **Cube** column, select the cubes the calendar applies to.
4. From the **Time** column, specify the time definition for the calendar by selecting the year and period for the start of the calendar. You can select specific members or use substitution variables.
5. From the **Current** column, specify the start of the prediction period. The previous period is the end of historical data.
6. Enter the **Number of Historical Periods** and **Number of Future Periods**, and then click

Save ✓ .

To edit a calendar, from the **Calendar** list, double-click the row with the calendar you want to

edit to make the options editable. Make any required changes, and then click **Save** ✓ . To discard your changes, click **Cancel** ✕ .

To delete a calendar, from the **Calendar** list, click **Actions** ••• next to the calendar you want to delete, and then click **Delete Calendar**.

Defining Events

Events are associated with calendars.

To define events:

1. On the **Events** tab, click **Add Event**.
2. Enter a name and description for the event.
3. From the **Type** column, select the type of event:
 - **One-off**—An event you don't expect to be repeated, but you want to include it in your data.
 - **Repeat**—An event that is regularly repeated, where increases or decreases will also be repeated. For example, holidays such as Diwali or Thanksgiving are repeating events.
 - **Skip**—Similar to a one-off event, it's an event you don't expect to be repeated, however, you don't want to include it in your data. Data for Skip events is removed from the series.

 **Note:**

If you define a Skip event that is shorter than your seasonality, it can affect the accuracy of the historical data. For example, you might define an event for Covid that is three months long, but your season is twelve months, so you have only nine months of data. You lose seasonality because the data is skewed. In these cases, it might be more effective to skip the entire season.

4. From the **Calendar** column, select the calendar that the event applies to.
5. From the **Starts on** column, specify the start date for the event.
6. From the **Duration** column, enter the event duration (the number of periods the event is valid). For example, in a daily calendar, if duration is 4, the event occurred for 4 days continuously from the start of the event. In a weekly calendar, if duration is 1, the event occurred for a week.
7. For regularly repeating events, from the **Interval** column, enter the interval for the repeat. For regularly repeating events, the interval should be a number that indicates after how many days, weeks, or months the event repeats. For example, in a weekly calendar, Christmas repeats after 52 weeks.
You don't need to specify an interval for one-off or skip events.
8. For custom repeating events, from the **Occurrences** column, click \dagger and enter specific details about when the event occurs. For example, US Thanksgiving occurs annually, but on a different date each year.
9. Click **Save** ✓.

Events are automatically set in **Active** status (indicated by the check mark in the **Active** column). You can clear the check box to make an event inactive. Only active events are taken into consideration during predictions.

To edit an event, from the **Events** list, double-click the row with the event you want to edit to

make the options editable. Make any required changes, and then click **Save** ✓. To discard your changes, click **Cancel** ✕.

To delete an event, from the **Events** list, click **Actions** ••• next to the event you want to delete, and then click **Delete Event**.

Importing and Exporting Events

You can export events to a .csv that you download, and then add or modify events. You can then import the events from the csv file. This process is a fast way to add many events, and can be valuable for auditing and troubleshooting event definitions.

To export events, on the **Events** tab of IPM Configure, from the **Actions** menu, select **Export Events**.

To import events, on the **Events** tab of IPM Configure, from the **Actions** menu, select **Import Events**, select the file and then click **Import**. You can then review the **Import Events** job. From the Home page, click **Application**, then click **Jobs** and then click the **Import Events** job that was run.

If you import an event with the same name as an existing event, the existing event is overwritten.

Configuring IPM Insights

Configure IPM Insights to define the insights that planners see on the Insights dashboard.

You configure IPM Insights by selecting the type of analysis to perform, specifying the slice definitions for analysis, configuring the analysis, and then defining the settings for the insights displayed on the Insights dashboard. You can define insights for as many data intersections as you need. Planners see insights only for slices of data to which they have access.

You can also define a prediction using Auto Predict to predict future performance based on historical data and schedule a job to run that prediction definition, automating the prediction process. You can use these prediction results as input for generating insights.

If you want to associate calendars and events with insight definitions and Auto Predict prediction definitions, configure calendars and events first. See [Configuring Calendars and Events](#).

To configure IPM Insights:

1. From the Home page, click **IPM** and then click **Configure**.
2. Click **Create**.
3. In IPM Configurator, on the **Types** page, enter a name and description.
4. Select **Auto Predict** to predict future performance based on historical data using time series forecasting techniques. Prediction results can be used as input for generating prediction insights. For more information about Auto Predict, see [Setting Up Predictions to Run Automatically with Auto Predict](#).
5. Select the types of insights to generate, and then click **Next**. You can select as many as you need.
 - **Forecast Bias Insights**. Reveals hidden bias in forecasts submitted by planners by analyzing historical data. Measures the variance or bias between two historical scenarios such as Forecasts and Actuals.
 - **Prediction Insights**. Looks for variance between future scenarios such as forecasts made by planners and computer-generated predictions.
In **Do you have prediction data available?**, if you have prediction data available and know where prediction data is, select **Yes**. If not, select **No** and **Auto Predict** is automatically selected. Auto Predict uses the historical data for the intersection you defined to generate prediction data that is used for the insight.

You can also use a prediction based on Machine Learning instead of auto prediction.

- **Anomaly Insights.** Detects outlier values that vary widely from other values.

You can also choose to just run Auto Predict by selecting **Auto Predict**.


6. On the **Select Calendar** page, select a calendar to use, and then click **Next**. If you select a calendar, the **Historical Data** section and the **Future Data** section are populated with details from the selected calendar.

If you don't select a calendar, you can select these options yourself.

For **Future Data**, you can define insights that analyze at the parent level or at the leaf level for Period members. For example, for **Future Periods**, if you have monthly data, you can perform the analysis at the quarterly level. Note that leaf level and middle level parent members are allowed. Top level parent members, anything directly below Period, are not supported. For Auto Predict, analysis must always be at the leaf level.

7. On the **Define Slice** page, define the slice of data to analyze for historical data and future data, and then click **Next**. For considerations on using dynamic calc parent members in the slice definition, see [Considerations for Defining the Slice for Insights](#).

- In the **Historical Data** section, select the cube and then define the slice of data for the historical data—both actuals and the forecasts provided by the planners. The slice definitions show all the dimensions for the cube, except for the Year and Period dimensions. All members start out with their root member selected.
- In the **Future Data** section, select the cube and then define the slice of data for the future data—both the forecast provided by planners, and the base prediction (most likely scenario).

If the data is available, click  to add a definition for the slice of data for the best case and worst case scenarios.

If you selected Auto Predict, prediction results are stored in this location.

8. On the **Configure** page, configure the insights by defining the error tolerance and thresholds for insights, and then click **Next**. IPM Configurator selects default metrics for analysis.

- **Auto Predict:** Select whether to include events in the prediction. If you select **Show Advanced Options**, select additional options to define an auto predict job. For more information, see [Configuring Advanced Auto Predict Options](#).
- **Forecast Variance & Bias Insights:** Select an error tolerance percentage, which defines the percentage variance between historical forecasts submitted by planners and actuals that lies within acceptable range. If the percentage variation crosses the error tolerance limit, it is considered for bias calculation. For example, if you enter .05, any difference of 5% or above between historical forecasts and historical actuals is considered a significant variance (and considered either under-forecasting or over-forecasting) and triggers an insight.

You can select or modify the metric and threshold for deviation on the **Advanced Options** page. See [Configuring Additional Insight Settings](#).

An insight is generated when either deviation or bias crosses the specified threshold.

- **Prediction Insights:** Select a threshold percentage, which defines the acceptable percentage variance between future forecasts submitted by planners and computer-generated predictions. An insight is generated when either deviation or risk crosses the specified threshold.

For example, if you enter 25%, any difference of 25% or above between future forecasts and future predictions would be considered a significant variance (and considered either under-forecasting or over-forecasting), and would trigger an insight.

- **Anomaly Insights:** Select whether to include events in the insights calculation. Select a threshold, which defines the acceptable threshold for Z-score value (the standard deviation from the mean of the values). Anything that is too far from zero (the threshold is usually a Z-score of 3 or -3) should be considered an outlier.

An insight is generated when the specified outlier detection metric crosses the specified threshold.

For example, if you enter 3, anything that is three standard deviations or higher from the mean would be considered an outlier, and would trigger an insight.

If you want to configure additional options, such as selecting the metrics to use, click **Show Advanced Options**. See [Configuring Additional Insight Settings](#).

9. On the **Settings** page, configure the settings that define how to display the insights to planners, and then click **Save**.
 - **Display Dimensions:** Select the dimensions that planners will use to navigate and analyze the insights. The dimensions you select will display on the Insights dashboard.
 - **Impact Magnitude Thresholds:** When insights are displayed on the Insights dashboard, this setting categorizes insights into High, Medium, and Low groups based on the percentage or absolute value impact calculated for each insight. This helps planners focus attention on the insights that have more extreme variations.
 - Anything less than the low value is in the Low category.
 - Anything higher than the high value is in the High category.
 - Anything between the low and high value is in the Medium category.

For example, if you specify 30% as the Low threshold and 60% as the High threshold, any insight with a percentage impact less than 30% is in the Low category; any insight with a percentage impact greater than 60% is in the High category. Any insight with a percentage impact between 30% and 60% is in the Medium category.

When entering an absolute value for impact magnitude thresholds, the currency defined in the slice definition applies to the absolute value. If you have multiple currencies defined, you can't apply an absolute value magnitude threshold; the option is not available.

10. Now you're ready to run the insights you configured. See [Running and Scheduling Insights](#).

Insight definitions are saved as global artifacts (in the Auto Predict folder under Global Artifacts) and are backed up with the maintenance snapshot.


About Using Events with Insights, Auto Predict, and Predictive Planning

Note the following about using events:

- Using events can impact the anomaly insights that are generated. For example, if you create a one-off or repeating event for a specific date where sales spike, and you generate a prediction, anomalies in data for that date are not reported as anomaly insights. Instead, the prediction includes the sales spike for that date. If you generate a prediction without events, an anomaly insight is reported for that date.
- In Auto Predict jobs, note the following behavior for skip and one-off events:
 - For skip events, once the skip event goes into the prediction range, the skip event is not mentioned or listed in the downloaded job report.


- For one-off events, once the one-off event reaches the last period of the historical data (the period which bumps up against the prediction range), the one-off event is not mentioned or listed in the downloaded job report.
- In prediction on forms using Predictive Planning, note the following behavior for skip and one-off events:
 - For skip events, once the skip event goes into the prediction range, the skip event is no longer applied.
 - For one-off events, once the one-off event reaches the last period of the historical data (the period which bumps up against the prediction range), the one-off event is no longer applied.

Videos

Your Goal	Watch This Video
Learn how to configure insights to automate data analysis. Administrators configure insights to define the insights that planners see on the Insights page. You select the type of analysis to perform, specify the slice definitions for analysis, configure the analysis, and then define the settings for the insights displayed on the Insights page. You can run the insight or schedule it to run on a regular basis.	 Oracle Fusion Cloud EPM - Configuring Insights

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to configure IPM Insights by selecting the type of analysis to perform, specifying the slice definitions for analysis, configuring the analysis, and then defining the settings for the insights displayed on the Insights dashboard. You can define insights for as many data intersections as you need. Planners see insights only for slices of data to which they have access.	 Configuring Insights

Considerations for Defining the Slice for Insights

In IPM Insights, you can generate insights for dynamic calc parent members.

- For reporting cubes (Aggregate Storage, or ASO cubes), there is no restriction on including dynamic calc parent members in insight definitions.
- For data entry cubes (Block Storage, or BSO cubes), you can't include dynamic calc parent members or any dynamic calc member even at the leaf level, however you can use this solution:
 - Create an alternate hierarchy with shared members for parents that you want to consider for insight generation. The parent members should be defined as level zero members in the alternate hierarchy. When you configure the insight slice definition, make sure to select the members from the alternate hierarchy.

- As a best practice, move the data to the reporting cube (Aggregate Storage, or ASO cube) using data maps, and then generate insights from that cube.

Including dynamic calc parent members in insights is especially helpful when you have a large number of members: you don't have to define multiple slice definitions for level zero members; you can define the slice definition to include a parent member.

Considerations:

- To avoid delays in insight generation for reporting cubes (ASO), consider not including dynamic parent members that have formulas in insight definitions.
- Because the number of alternate hierarchies you can create is limited, for data entry cubes (BSO), as a best practice, move the data to the reporting cube (ASO cube) using data maps, and then generate insights from that cube.
- For ASO cubes, prediction insights require that the slice definition includes only level zero members. Alternatively, to generate prediction insights for dynamic calc parent members, don't enable Auto Predict. Or, run the prediction in BSO, and then move the results to ASO.

Configuring Additional Insight Settings

On the IPM Configurator **Configure** page, click **Show Advanced Options** to define the metrics and trigger criteria for insights. For information about Auto Predict Advanced Options, see [Configuring Advanced Auto Predict Options](#).

- For **Forecast Variance & Bias Insights**:
 - **Deviation Metric**
 - * **Metric**: Select the metric to use for analysis for the variations between the historical actuals and the historical forecasts submitted by planners.
 - * **Threshold**: Select the deviation percentage at which to trigger an insight. For example, if you specify 15 as the threshold, any time the deviation between historical actuals and the historical forecasts submitted by planners is 15% or greater, an insight is generated.
 - **Bias Metric**
 - * **Error Tolerance Limit**: Specify a percentage for the error tolerance limit. For example, if you enter 5%, any difference of 5% or greater between historical forecasts and historical actuals is considered a significant variance.
 - * **Bias Metric**: Specify the metric to use to measure forecast bias.
 - * **Bias Threshold**: Select the deviation percentage at which to trigger an insight.
- For **Prediction Insights**:
 - **Deviation Metric**
 - * **Metric**: Select the metric to use for analysis for the variations between the future forecasts submitted by planners and computer-generated predictions.
 - * **Threshold**: Select the deviation percentage between the future forecasts submitted by planners and computer-generated predictions at which to trigger an insight.
 - **Risk % and Threshold**: Select the risk level you are willing to tolerate of not meeting your forecast before triggering an insight. This setting evaluates the probability of meeting or missing the target for your current forecast numbers.
- For **Anomaly Insights**:

- **Method:** Select the anomaly detection metric to use for analysis.
- **Threshold:** Select the threshold at which to trigger an insight.

For details on the metrics used in IPM Insights, see IPM Insights Metrics in *Working with Planning*.

Running and Scheduling Insights

After configuring insights, you can run them any time. You can also set up a job to run insights at a regular interval, for example, when you have a new set of actuals.

When you run an insight, IPM Insights analyzes the data at each available intersection and looks for patterns and anomalies.

To run insights:


1. From the Home page click **IPM** and then click **Configure**.
2. From the **Actions** menu next to the insight you want to run, click **Run**.
3. To review the insight jobs, from the Home page, click **Application**, then click **Jobs**, and then select the insight. You can see the job status and the associated subjobs for each type of insight or auto prediction.

For information about scheduling IPM Insights jobs, see [Scheduling Jobs](#). IPM Insights has its own job type, called **Insights**.

Insights are available on the Insights dashboard for six months, after which they are purged the next time you run an IPM Insights job.

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to run and schedule Insights in EPM Cloud.	 Running and Scheduling Insights

Managing Insight Definitions and Generated Insights

You can edit, delete, or duplicate existing insight definitions. Administrators can delete insights that have been generated.

To edit, delete, or duplicate an insight definition:

1. From the Home page, click **IPM**, then click **Configure**.
2. From the **Actions** menu next to an insight, click **Edit**, **Duplicate**, or **Delete**.

Administrators can delete insights that have been generated. To delete an insight, on the Insights dashboard, from the **Actions** menu for the insight you want to delete, click **Delete Insight**.

Managing Tags

You can collaborate with your colleagues more effectively and leverage the power of automated analysis with IPM Insights using tags.

You can add tags in the Comments box for an insight:

- Use # to tag insights with a custom label. For example, you can tag a set of insights for team review by adding #TeamReview.
- Use @ to tag a user or group.

Then, filter your Insights dashboard to see tagged insights. For more details about adding tags, and filtering and searching on tags, see [Collaborating with Insights Using Tags](#) in *Working with Planning*.

As an administrator, you can manage tags by adding more tags or deleting tags that are no longer needed.

To manage tags:

1. From the Home page, click **IPM** and then click **Tags**.
2. To add a new tag, click **Add Tag** and then enter a tag name.
3. To delete a tag, click the **Actions** menu next to a tag and then click **Delete**.

Bring Your Own ML: About Machine Learning Model Import

With Bring Your Own ML, EPM administrators can import a fully trained Machine Learning (ML) model and deploy it to a Planning application. Planners can then leverage robust, ML-based forecasting that uses advanced predictive modeling techniques to generate more accurate forecasts.

Data scientists gather and prepare historical data related to a business problem, train the algorithm, and generate a PMML file (Predictive Model Markup Language, a standard language used to represent predictive models) using a third party tool. These predictive analytic models and machine learning models use statistical techniques or ML algorithms to learn patterns hidden in large volumes of historical data. Predictive analytic models use the knowledge acquired during training to predict the existence of known patterns in new data.

EPM administrators can then import and configure the fully trained ML model, which generates two Groovy rules. Administrators attach the rule to a form or dashboard, or schedule a job to generate prediction results on a regular basis. This puts the benefits of machine learning and the power of data science into the hands of business users, enhancing the planning and budgeting process and leading to better business decisions.

For example, you can predict product volume for an entity, using key drivers such as average sales price, planned spend on promotions and advertising, historical volumes, and estimated industry volumes.

You can import ML Models and use them to predict numeric values in other finance use cases, for example:

- Trade promotion impacts on sales uplifts
- Marketing mix modeling to drive better ROMI
- Internal and external driver impacts on revenue forecasts

- Predictive cash forecasting for better cash position

Overview of Steps



Prerequisite: Data scientists build and train the ML model in a data science tool (any third party tool or Oracle Data Science Cloud) and save it as a PMML file.


Next, EPM administrators put the model to work to get business value from the trained model:

1. Administrators import the ML model in PMML format to a Planning application and define how the input variables and target variable maps to dimension members or cell values in the Planning application. This step generates automatic Groovy rules that connect the ML model to the Planning application. Two Groovy rules are generated for each ML model definition: one rule to associate with a form or dashboard, which allows users to make predictions on demand, and another to generate large scale predictions in a scheduled job for bulk processing. See [Importing an ML Model](#).
2. Administrators deploy the ML model in a Planning application by associating the Groovy rule to relevant action menus, forms, or dashboards. See [Deploying an ML Model to Planners](#). Administrators can also create a job to run the Groovy rule in a batch process.
3. Planners leverage ML-powered business rules in forms to generate predicted values, which are saved on the form. Planners can perform what-if analysis using the generated predictions, or modify predicted values on the form. Planners add value with their expertise and judgement, and then finalize the forecast.
4. This is an iterative process. As planners make predictions based on the ML model, administrators can measure the performance of the model, and can work with data scientists to update or replace the ML model when needed. Then, administrators re-import and deploy the retrained ML model.

When you re-import the retrained ML model, the Groovy rules are regenerated.

Videos

Your Goal	Watch This
This overview introduces you to Bring Your Own ML (Machine Learning), where EPM Administrators can import a fully trained ML model and deploy it to a Planning application. Planners can then leverage robust, ML-based forecasting that uses advanced predictive modeling techniques to generate more accurate forecasts.	 Overview: Bring Your Own Machine Learning (ML)
Learn how to configure ML model import for Bring Your Own Machine Learning. You import a fully trained ML model into Planning . You follow the steps in a wizard to map, analyze, and test the model. After saving the model, two Groovy rules are created. To complete the integration process, see the related video for deploying an ML model to Planning .	 Configuring Machine Learning (ML) Model Import

Your Goal	Watch This
<p>Learn how to deploy an ML Model to Planning . After configuring the ML Model Import, you integrate the PMML file into your application by creating an Action Menu with the Groovy rule generated from the configured ML model. Then you associate the Action Menu with a form. When planners run the rule from the form, the rule returns the set of predicted values.</p>	 <p>Deploying a Machine Learning (ML) Model to Planning</p>

Considerations for Bring Your Own ML

The following are some of the considerations for Bring Your Own ML.

Considerations:

- Bring Your Own ML requires an EPM Enterprise Cloud service subscription; it is not available in EPM Standard Cloud. It is also available with Enterprise Planning and Budgeting Cloud and FreeForm.

In addition, you can use Bring Your Own ML with Oracle Sales Planning Cloud and Oracle Strategic Workforce Planning Cloud.

- Bring Your Own ML works with Custom, FreeForm, Modules, Sales Planning, Strategic Workforce Planning, and Cash Forecasting application types.
- Bring Your Own ML requires Groovy rules.
- Bring Your Own ML is available only with Redwood Experience enabled.

Importing an ML Model

Import a fully trained ML model into a Planning application to prepare it for use by business users.

Prerequisite: Before you can import the ML model, the data science team must build, train, and save the ML model as a PMML file.

To import an ML model to a Planning application:

1. From the Home page, click **IPM** and then click **ML Models**.
2. Click **Import**, and then drag and drop the PMML file, or browse to it and select it. On the **Import Model** page, you see information about the PMML file, such as the target column (the variable to be predicted using the ML model) and the training date.
3. Enter a model name and description, and then click **Next**.
4. On the **Generate Rule** page, enter information that will generate a Groovy rule to associate with forms or dashboards:

In **Model Mapping**, select the cube where the ML model will be used and define the scope of data in which to use the ML model by selecting a member or set of members from each dimension.
5. Map **Input** and **Output** to the appropriate dimensions and members in the cube and then click **Next**.

The **Input** and **Output** sections contain the list of input features (features/columns that are used to make predictions) and target feature (column that is expected to be predicted). Planning analyzes the PMML file to generate the list of inputs and outputs.

Input features are independent variables, similar to drivers, that act as input to your system. When you make predictions, the model uses input features to predict your output. In this step, you map the input from the ML model to the output in the Planning cube. **Input** describes how to extract the data from the ML model. **Output** defines the target measure you want to predict and where to paste the predicted values in the Planning application.

For example, product, price, and industry volume, the input features, might be used to predict volume, the output.

- In the **Input** area, for each input feature, select an **Input Type** and if you select **Cell Value** or **Member**, select the members or dimensions in the Planning application to map to. Input types:
 - **Prompt:** If you don't have a member or dimension in Planning that maps to this input value from the ML model, when the prediction is made, prompt the user to enter an estimate for the value.
 - **Cell Value:** Map an input feature to one or more dimension members in the Planning cube. For example, the input feature called Price maps to an account member called Price in the Planning application.
 - **Member:** Map an input feature to a dimension in the Planning cube. For example, the Input feature called Product maps to the Product dimension in the Planning application.
 - In the **Output** area, select an **Input Type** and if you select **Cell Value** or **Member**, select the members or dimensions in the Planning application to map to to store prediction results.
6. In **Analyze Model**, review the ML model and then click **Next**. This step represents MLX (Machine Learning Explainability), and extracts additional information about the ML model. For example, review Regression Coefficients to see how the relative impact of key input features is used to predict the output. The height of the bar represents the incremental effect of one unit increase in an input feature on the target variable.
 7. In **Test Model**, test the ML model by generating a prediction for a set of sample values. For each **Input**, enter a sample input value and then click **Predict**.
 8. Review the predicted **Output** value, and then click **Save and Close**.
 9. Click **Yes** to confirm the creation of Groovy Rules.


Two Groovy rules are generated for each ML model definition:

- *ML_MLModelName_Form*: Use this rule to associate with a form or dashboard, which allows users to make predictions on demand.
- *ML_MLModelName*: Use this rule to generate large scale predictions in a scheduled job for bulk processing.

You can review the generated rules in Calculation Manager. The Groovy rules define the name and location of the PMML file, along with input and output based on the mapping you defined. For more information on using these generated Groovy rules, see [Deploying an ML Model to Planners](#).

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to import a fully trained ML model and deploy it to a Planning application. Planners can then leverage robust, ML-based forecasting that uses advanced predictive modeling techniques to generate more accurate forecasts.	 Importing ML Models

Deploying an ML Model to Planners



Deploy an imported ML model to make it available to planners on forms and dashboards. Planners can use machine learning to generate a prediction.

After importing a PMML model, EPM administrators integrate the PMML file into the Planning application by associating the generated Groovy rule with Planning forms.


You can first review the Groovy rules in Calculation Manager to validate the mappings and make changes if needed. When the Groovy rule is finalized, you can associate it with relevant forms or dashboards.

Make the Groovy rule available to planners by creating an Action Menu that you associate with a form.

To associate an ML Groovy rule with a form:

1. Create an Action Menu item:
 - a. From the **Navigator**, under **Create and Manage**, click **Action Menus**.
 - b. Click , enter the menu's name, and then click **OK**.
 - c. Select the new menu item, click , and then click **Add Child**.
 - d. Enter a **Menu Item** name, and give it a label, for example, **Predict Volume**, of type **Business Rule**, and select the appropriate cube and Groovy rule with the `Form` suffix, for example: `ML_MLModelName_Form`. Then click **Save**.

For more information, see [Creating and Updating Action Menus](#).

2. Associate the action menu with a form:
 - a. From the **Navigator**, under **Create and Manage**, click **Forms**.
 - b. Navigate to the form, click , and under **Other Options**, click the Action Menu item you created. Associate the menu with the form by moving it from **Available Menus** to **Selected Menus**. Then click **Save**.

For more information, see [Administering Forms](#).

When a planner selects the Action Menu item from the form, it triggers the Groovy rule. The rule picks the data for all input drivers, sends it to the PMML file for processing, returns the set of prediction values, and pastes them to the output, as defined in the **Import Model** wizard. The rule runs in the context of the form, predicting values only for cells on the form. Security is honored so that planners see predictions only for intersections to which they have access. Planners can run through various what-if scenarios to adjust their forecasts and plans, or adjust the predicted values.

Note that planners must have access to the model, form, rule, and members in order to run the rule.

Running an ML Groovy Rule as a Batch Job


You can run the ML Groovy rule as a job. The batch rule runs for all cells for the full scope of the model, not just for cells on a particular form. You can set it up to run as a recurring job, for example, to load predictions so they are available to planners on a regular basis.

To run or schedule a batch job, in **Jobs**, select a **Job Type** of **Rules**, and then select the Groovy batch version of the business rule for the PMML model—`ML_MLModelName`.

For information about scheduling jobs, see [Scheduling Jobs](#).

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to take the Groovy rule created from an imported ML Model, and add it to a form. Then you make predictions with the ML model in Planning .	 Making Predictions with ML Models

16

Setting Up Predictions to Run Automatically with Auto Predict

Use Auto Predict to predict future performance based on historical data.

Related Topics

- [About Auto Predict](#)
With Auto Predict, administrators can define a prediction to predict future performance based on historical data and schedule a job to run that prediction definition, automating the prediction process.
- [Creating Auto Predictions for Forecasts](#)
Create an Auto Predict prediction definition to automate predictions.
- [Running Auto Predict Predictions](#)
You can run an Auto Predict prediction definition from the Auto Predict page or the IPM page, or you can schedule a job to run the prediction automatically.
- [Editing, Deleting, or Duplicating Auto Predict Prediction Definitions](#)
You can edit, delete, or duplicate existing Auto Prediction prediction definitions.
- [Reviewing Detailed Reports for Auto Predict Predictions](#)
You can review Auto Predict prediction result details in a downloadable report in an Excel worksheet format, including details such as prediction status, method used, and prediction accuracy.

About Auto Predict

With Auto Predict, administrators can define a prediction to predict future performance based on historical data and schedule a job to run that prediction definition, automating the prediction process.

Auto Predict uses the same forecasting and statistical methods as Predictive Planning, but unlike Predictive Planning, you aren't limited to running a prediction on a form. You can predict values for thousands of cells at once, when needed, by scheduling a job, and automatically write prediction results to a scenario/version—in the same cube or in a different cube from the historical data. You can also include Best and Worst Case prediction results. When you run the prediction, historical data for each member in the Auto Predict definition is retrieved and then analyzed using time series forecasting techniques to predict the future performance for these members.

Auto Predict is useful:

- When you have large amounts of data to predict.
- To jumpstart the forecasting process by pre-filling a prediction scenario with predictions based on historical data. Then, planners can compare predictions to forecasts.
- For variance analysis. Seed a prediction scenario with prediction results, and compare predictions to forecast. To incorporate variance thresholds, you can define a groovy rule that requires planners to add explanatory commentary at a defined threshold, for example if the forecast is 5% greater than the prediction.

- To pre-populate your Forecast or Plan scenarios before starting a forecast or planning cycle. Planners can use these prediction results as a starting point for their forecasts, and make adjustments as needed.
- To keep predictions up-to-date as actuals come in by scheduling Auto Predict jobs. When new actuals come in, the job can run automatically to populate the cube; planners can see updated predictions and compare to forecast and plan.

Use Auto Predict results in forms, dashboards, and in ad-hoc analysis. You can also use Auto Predict prediction results within Smart View.


You define a prediction to read historical data from a cube (typically an ASO cube) and write prediction results to the same cube or to a different cube, for example to a BSO cube where planning and forecasting is done.

You can also use calendars and events with Auto Predict. For more information, see [About Using Calendars and Events in IPM Insights, Auto Predict, and Predictive Planning](#).

To work with Auto Predict:

1. Define the Auto Predict prediction. See [Creating Auto Predictions for Forecasts](#).
2. Modify application settings if needed to set the **Prediction Interval**. These settings are shared with Predictive Planning. By default, the prediction interval for worst and best cases is 2.5% and 97.5%. See [Managing Application and System Settings](#).
3. Run the Auto Predict prediction: See [Running Auto Predict Predictions](#).
 - Run the Auto Prediction from the Auto Predict or IPM list.
 - Schedule a job to run the Auto Predict prediction automatically.

Videos

Your Goal	Watch This Video
Learn how to set up an auto predict definition, and schedule a job to run that definition. See how to prefill a prediction scenario to jump start the forecasting process, and how to directly compare the system's predictions to your ongoing forecast in real time. You compare predictions to Forecast and incorporate variance thresholds that require you to enter explanatory commentary. Also see how to seed plans or forecasts prior to starting the forecast cycle.	 Forecasting with Auto Predict in EPM Cloud Planning

Auto Predict Considerations

- Auto Predict works with EPM Standard and EPM Enterprise applications for Custom and Module application types when Hybrid Essbase is enabled.

For legacy applications, Auto Predict works with legacy Enterprise Planning and Budgeting Cloud Service and Planning and Budgeting Cloud Service Plus One (PBCS +1), when the Essbase version is upgraded to the version that supports Hybrid Essbase and Hybrid Essbase is enabled.

- Auto Predict works with EPM Enterprise applications for Sales Planning, Strategic Workforce Planning, and Cash Forecasting application types when Hybrid Essbase is enabled.

- In addition, you can use Auto Predict with Oracle Sales Planning Cloud and Oracle Strategic Workforce Planning Cloud.
- Auto Predict is not available in freeform applications.
- Auto Predict is available in all themes, except for configuring advanced Auto Predict options. Configuring advanced auto predict options is available only with Redwood Experience enabled.
- Auto Predict works with custom time periods in Planning and alternate time periods in Planning modules; for example in Financials you can predict at both a weekly level and at a monthly level in the same application.
- Prediction results are more accurate the more historical data you have. There should be at least twice the amount of historical data as the number of prediction periods.

When series have less than six historical data points, Auto Predict does not use forecasting, instead it uses a straight line fit for the prediction series. In this case there are results only for the base case. Best case and worst case are not calculated, because the values would be the same as the base case.

- For details about the statistical forecasting methods used in Auto Predict predictions, see Predictive Planning Forecasting and Statistical Descriptions in *Working with Planning*.
- Planners can do predictions directly on a form. For more information, see Improving Forecasting Accuracy with Predictive Planning in *Working with Planning*.


Creating Auto Predictions for Forecasts

Create an Auto Predict prediction definition to automate predictions.

If you want to associate calendars and events with Auto Predict prediction definitions, configure calendars and events first. See [Configuring Calendars and Events](#).

To create an Auto Predict prediction definition:

1. From the Home page, click **Application**, then click **Overview**, and then from the **Actions** menu, select **Auto Predict**.
 Alternatively, if Redwood Experience is enabled and you are using IPM Insights, from the Home page, click **IPM** and then click **Configure**.
2. Click **Create**.
3. On the **Types** page, enter a name and a description for the Auto Predict definition. Additionally, if you are using IPM Insights, select **Auto Predict** in the **Generate Predictions** area.
 Then click **Next**.
4. On the **Select Calendar** page, select a calendar to use, and then click **Next**. If you select a calendar, the **Historical Data** section and the **Future Data** section are populated with details from the selected calendar.
 If you don't select a calendar, you can select these options yourself.
5. On the **Define Slice** page, define the slice of data to analyze for historical and future data, and then click **Save**.
 - In the **Historical Data** section, select the cube and then define the slice of data for the historical data—both actuals and the forecasts provided by the planners. The slice definitions show all the dimensions for the cube, except for the Year and Period dimensions. All members start out with their root member selected.

- In the **Future Data** section, select the cube and then define the slice of data for future data. Auto Predict results are stored in this location. You can click  to add a definition for the slice of data for the best case and worst case scenarios.

The prediction interval used to define the **Best Case** and **Worst Case** results is defined in **Settings** for the application and is shared with Predictive Planning. See [What Application and System Settings Can I Specify?](#).

You can predict at a weekly level in Financials. To predict at a weekly level, when defining the Auto Predict definition, in the **Predict** section, you must select **Specific Period** for the **Start Period**.

 **Tip:**

When setting the **Start** for a prediction, when the start is **Specific Period**, for the **Select Period** Member Selector, you can select by substitution variable for the Current Period. In this way, job definitions are updated each time the value for the substitution variable is updated—change the value for the substitution variable and you don't have to edit every job to update the current period. To select for Substitution Variables, in the lower left corner of the Member Selector, select **Substitution Variable** from the list.

6. On the **Configure** page, select whether to include events in the prediction. If you want to define advanced options, click **Show Advanced Options**. For details on advanced auto predict options, see [Configuring Advanced Auto Predict Options](#).
7. Click **Save**.

After defining the Auto Predict prediction, you can run the prediction from the Auto Predict page or from the IPM page, or you can schedule a job to run the prediction automatically. See [Running Auto Predict Predictions](#).

Auto Predict definitions are saved as global artifacts and are backed up with the maintenance snapshot.

Configuring Advanced Auto Predict Options

If you haven't yet created an Auto Predict prediction definition, see [Creating Auto Predictions for Forecasts](#).

When you're configuring Auto Predict prediction definitions, you can use default prediction options, or on the **Configure** page, click **Show Advanced Options**.

Showing advanced options gives you additional options for:

- Data Screening: See [Data Screening Options](#)
- Data Attributes: See [Data Attributes Options](#)
- Prediction Methods: See [Methods Options](#)

Data Screening Options

Historical data can have missing values and outliers, which are data points that differ significantly from the rest of the data, or can include events, which are typically one-off or recurring events that historically led to spikes or declines in the data. **Data Screening** options enable you to select several ways of handling missing values, identifying and adjusting outliers,

and including events in predictions. Because adjusted outliers are treated as missing values, both of these situations are discussed and handled together.

Select from these options for **Data Screening**.

- **Include Events**—This option is available for planners working with Predictive Planning on forms. When this option is selected, any events defined for the selected calendar are taken into consideration during the prediction. (Planners must first select a calendar. From the prediction area on the form, select **Settings**, and then select **Date Ranges**). If you include events, historical spikes or declines are also reflected in future predictions. For example, a North American calendar might include an event for Christmas, or an APAC calendar might include an event for Diwali, when sales would typically spike. By including the historical data spikes in the prediction, you see the spikes in the predicted data, so you can plan ahead for volume or to make use of the opportunity.

Without events, spikes or falls in data are normalized and distributed over the prediction period, potentially leading to less accurate predictions.
- **Adjust Outliers**—When this option is selected, when an outlier is detected in the series, outlier values are replaced with the prediction trend line value to avoid the impact of outliers.
- **Fill in missing values**—When this option is selected, if there are missing values in the time series, the missing values are populated with the prediction trend line value to continue with the prediction.
- **Minimum missing threshold**—When this option is selected, missing values in the time series are filled until the threshold is met. If the number of missing values is above the threshold provided, the prediction is not done. The maximum value can't be greater than 50%.

Data Attributes Options

Select from these options for data attributes and seasonality:

- **Override prediction range**: When this option is selected, the prediction overrides the minimum number of historical data points typically required to run a prediction. Instead, it predicts the number of periods based on the number of historical data points that are available. For example, it predicts y periods when $2y$ historical data points are available. If this option is not selected, if the prediction range is set to x periods, a minimum of $2x$ historical data points are required to run a prediction. If the minimum number of historical data points are not available, the prediction does not proceed.
- **Auto Detect**: When this option is selected, the prediction automatically detects seasonality based on the data.
- **Yearly Seasonal Override (12 periods)**: When this option is selected, seasonality is defined by the number of level 0 periods from the selected hierarchy. In cases where the number of historical data points is less than $2x$ of yearly seasonality, the prediction reverts to using **Auto Detect** for seasonality.
- **Custom**: When this option is selected, you can override the seasonality with a custom value by providing it in **Periods per cycle**. You can select this option when seasonality is not yearly.
- **Periods per cycle**: When **Custom** is selected, select the exact number of periods to be considered. If not enough data points are available, the prediction reverts to using **Auto Detect** for seasonality. The maximum allowed value for **Periods per cycle** is half of the total number of historical data range periods.

Methods Options

Select the method to use for predictions.

- **Apply seasonal methods:** Seasonal forecasting methods extend the nonseasonal forecasting methods by adding an additional component to capture the seasonal behavior of the data. For information on seasonal methods, see Classic Seasonal Forecasting Methods in *Working with Planning*. The prediction selects the best seasonal forecasting method to use.
- **Apply non-seasonal methods:** Nonseasonal methods attempt to forecast by removing extreme changes in past data where repeating cycles of data values are not present. For information on non-seasonal methods, see Classic Nonseasonal Forecasting Methods in *Working with Planning*. The prediction selects the best nonseasonal forecasting method to use.
- **Use ARIMA:** For more information about Autoregressive Integrated Moving Average (ARIMA), see ARIMA Time-series Forecasting Methods in *Working with Planning*.
- **Use Extended ARIMA Search:** Performs extended model search on ARIMA models by comparing with historical data. Results are accurate, but analysis will take noticeably more time.

Running Auto Predict Predictions

You can run an Auto Predict prediction definition from the Auto Predict page or the IPM page, or you can schedule a job to run the prediction automatically.

Running an Auto Predict Prediction

To run an Auto Prediction prediction definition:

1. From the Home page, click **Application**, then click **Overview**, and then from the **Actions** menu, select **Auto Predict**.
Alternatively, if you are using IPM Insights, from the Home page, click **IPM** and then click **Configure**.
2. From the list, click **Actions** next to an Auto Predict definition, and then select **Run**.
For Auto Predict predictions with a large number of cells to calculate, in **Run Parameters**, select a dimension and then click **Run Now**.

This setting is used to speed up an Auto Predict job by running predictions in parallel in separate prediction threads. For these parallel jobs to be efficient, choose a dimension that will result in evenly spread data for each prediction thread.

3. To review a summary of the prediction, review details in the Jobs Console: Click **Application**, then **Jobs**, and then click the prediction definition name on the **Jobs** page.

If a long-running prediction job is interrupted by an automated maintenance window, when the maintenance is complete, the prediction job picks up where it left off.

Scheduling an Auto Predict Job

For information about scheduling Auto Predict jobs, see [Scheduling Jobs](#). Auto Predict has its own job type, called **Auto Predict**.

For Auto Predict predictions with a large number of cells to calculate, in **Run Parameters**, select a dimension and then click **OK**. This setting is used to speed up an Auto Predict job by running predictions in parallel in separate prediction threads. For these parallel jobs to be

efficient, choose a dimension that will result in evenly spread data for each prediction thread. For recurring jobs, the selected dimension is used for jobs until you change it.

Before running a scheduled prediction job, Auto Predict analyzes certain factors to determine if prediction results would change. If the prediction results would not change, the Auto Predict job is not run. For example, if the historical range was set for the last three years and there has been no change in the start period/year for prediction, the historical data for analysis would be the same and the prediction results wouldn't change. In this case, to optimize performance and prevent unnecessary jobs from running, the Auto Predict job is skipped. A message is displayed indicating that the job will not run. If you want to run the prediction anyway, you can run the job from the Auto Predict page.

Editing, Deleting, or Duplicating Auto Predict Prediction Definitions

You can edit, delete, or duplicate existing Auto Prediction prediction definitions.

To edit, delete, or duplicate an Auto Predict prediction definition:

1. From the Home page, click **Application**, then click **Overview**, and then from the **Actions** menu, select **Auto Predict**.
Alternatively, if you are using IPM Insights, click **IPM** and then click **Configure**.
2. From the list, click **Actions** next to an Auto Predict definition, and then select **Edit**, **Duplicate**, or **Delete**.

Reviewing Detailed Reports for Auto Predict Predictions

You can review Auto Predict prediction result details in a downloadable report in an Excel worksheet format, including details such as prediction status, method used, and prediction accuracy.

The Excel workbook contains several worksheets:

- **Summary**: A summary of the prediction including details about the prediction and POV used, and any events that were considered during the prediction.
- **Report**: A detailed report of the prediction displayed by series using the alias for member names. Includes details such as status, accuracy, prediction method, seasonality, adjusted outliers, error measure, and other prediction statistics.
- **SV_Series_Data_CubeName** (Smart View Series Data) data access sheet: Data access for the cube used for the prediction using Smart View. Also allows you to perform ad hoc analysis on prediction data. For multiple cube jobs, includes a worksheet for the source cube and a worksheet for the prediction cube.

The detailed report is automatically generated when an Auto Predict job runs and is available in compressed format in the Outbox when the job is complete. The report is overwritten the next time the Auto Predict prediction job runs.

Reviewing the Report

To review the report from the Auto Predict page:

1. From the Home page, click **Application**, then click **Overview**, and then from the **Actions** menu, select **Auto Predict**.

Alternatively, if you're using IPM Insights, from the Home page, click **IPM** and then click **Configure**

2. From the **Actions** menu next to an Auto Predict definition, select **Download Report**.

To download the report from the Outbox:

1. From the Home page, click **Application**, and then click **Overview**.
2. From the **Actions** menu, select **Inbox/Outbox Explorer**.
3. Look for `AP_JobName.zip` and download the file.

Analyzing Prediction Data

On the **SV_Series_Data_CubeName** worksheet, you can perform ad hoc analysis using Smart View and drill into prediction data:

1. Select the **SV_Series_Data_CubeName** worksheet. The worksheet is populated with basic information including the historical date range, the prediction date range, and a member to start analysis.
2. Connect to the server where the Auto Predict prediction was run.
3. Select the cube used for the prediction (the cube name is appended to the worksheet name) and then select **Set Active Connection for this Worksheet**.
If the prediction definition uses two cubes, a source cube and a prediction cube, repeat this step on both **SV_Series_Data_CubeName** worksheets, selecting the appropriate cube to associate with each worksheet.
4. Click **Refresh**.

Tips for analyzing prediction data:

- For members you want to analyze, copy and paste the members from the **Report** worksheet (from the Series Dimension columns) to the **SV_Series_Data_CubeName** worksheet.
- On the **Report** worksheet, you can sort to analyze data in different ways. For example, sort on the **Accuracy** column to review cases with low accuracy. Then, copy and paste the members you want to analyze further to the **SV_Series_Data_CubeName** worksheet, for example, the ten members with the lowest accuracy.
- Use Excel charting features to visualize prediction results in different ways.
- If you want to use Predictive Planning on the worksheet data, you must first pivot all of the dimensions from the columns, other than the month and year, to the POV using the **Planning Ad Hoc** menu.

Managing Sandboxes

Enable users to use sandboxes to keep their work private while experimenting with various outcomes as they develop their plans.

Related Topics

- [About Sandboxes](#)
- [Enabling Sandboxes](#)
- [Enabling Version Members](#)
- [How Sandboxes Work with HSP_View and Version Members](#)
- [What Happens When a Sandbox is Published?](#)
- [Managing Sandboxes](#)
- [Sandboxes and Other Functionality](#)

About Sandboxes

Sandboxes enable users to keep their work private (from other non-administrators) as they develop their plans (see Building a Plan Privately in *Working with Planning*). Users may want to privately experiment with various outcomes in a sandbox without having others see their numbers until they've completed their analysis. When they're ready to make their numbers public (to others having access to them), they *publish* the data in the sandbox.

Some basics about sandboxes:

- Sandboxes are enabled at the cube level. You can select the **Sandboxes** option for block storage cubes that are seeded when you create the application. You can also enable sandboxes when you create a new block storage cube. You can't later change the sandboxes option for existing cubes, including cubes created by default such as Plan1. See [Enabling Sandboxes](#).
- By default, forms and ad hoc grids are in *base view*. When a user starts working in a sandbox, the form switches from base view to *sandbox view*. In sandbox view, the user's data is saved independently of the application's data. When users are done privately modifying and analyzing data in the sandbox, they publish the sandbox. When published, the new and changed data is saved to the application. The form is then back in base view. See [What Happens When a Sandbox is Published?](#).
- To provide access to sandboxes for users with the User role, you must enable the **Apply Security** option for the Version dimension. See also [Enabling Sandboxes](#) and [Enabling Version Members](#).
- All access permissions are in effect in sandboxes, including security on approval units. For example, if the Version member is part of an approval unit that is in the approvals process, users have write access only when they are the current owner of the approval unit.
- Users can have multiple sandboxes and switch among them.
- Multiple users can simultaneously work in multiple sandboxes without affecting each other's work.

- Service Administrators can see the names of (and data in) all sandboxes, which version member they're based on, who created each one, when they were last modified. Service Administrators can also delete anyone's sandbox. To manage sandboxes, from the Home page, click **Application**, then click **Overview**, then **Actions**, and then **Manage Sandboxes**.
- Because dynamic members are automatically calculated, users can immediately see the effect of their changes.
- When a cube is enabled for sandboxes, a dimension called HSP_View is added, with three members: *BaseData*, *SandboxData*, and *ConsolidatedData*. See [How Sandboxes Work with HSP_View and Version Members](#).
- When working in a sandbox, users can add members, but those members aren't added to the base version when the sandbox is published.

Videos

Your Goal

Learn how to analyze data with sandboxes.

Watch This Video



[Analyzing Data with Sandboxes in Oracle Planning and Budgeting Cloud](#)

Enabling Sandboxes

To enable sandboxes:

1. When you create an application, a block storage cube is created, which you can enable for sandboxes by selecting the **Sandboxes** option. You can also enable sandboxes when you create custom block storage cubes by selecting **Enable Sandboxes**.

You can enable sandboxes only in Standard applications and for custom cubes created in Enterprise applications, not for Reporting applications. After you enable sandboxes for a cube, you can't later disable that option. If you enable sandboxes for a cube, Version members have the **Enable Sandboxes** option.

2. Create and enable Version members for sandboxes, as described in [Enabling Version Members](#).
3. If needed, modify member formulas so that they calculate correctly in both base view and sandbox view.

Member formulas may be impacted by the new HSP_View dimension. To ensure that member formulas use the correct data for all versions, they must reference "ConsolidatedData"/Sandbox.

See:

- The topics in [How Sandboxes Work with HSP_View and Version Members](#)
- [Working with Member Formulas](#)

Note:

In **Data Maps**, all data mapping occurs at the HSP_View BaseData intersection. The base view is selected by default.

4. Design or modify forms that you want to support sandboxes so that either:

- The Version dimension is on the Page axis.
- The Version dimension is a POV that has a user variable.

 **Note:**

- Forms that don't meet one of the above conditions do not display sandbox options.
- In a sandbox, the HSP_View member is fixed on the POV and can't be changed.
- The only business rules that users can run in a sandbox are the default Calculate Form and Calculate Currencies rules.
- You can't import or export when you're in the sandbox view.

Enabling Version Members

To make versions available to sandboxes, Service Administrators create Version members and then select the member property **Enable Sandboxes**.

When users switch to sandbox view, they select an enabled Version member, and then the data in the sandbox is tied to that version. When the user switches back to base view, the base version data is displayed. If a user publishes their sandbox data, the modified data in the sandbox is saved to the application and displays in the base view. See [How Sandboxes Work with HSP_View and Version Members](#) and [What Happens When a Sandbox is Published?](#).

 **Tip:**

To edit member properties, from the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.

Note that the **Dimensions** link is available only if you're accessing the application from the desktop.

How Sandboxes Work with HSP_View and Version Members

Related Topics


- [The HSP_View Dimension](#)
- [Sample Formula for the ConsolidatedData Member](#)
- [Sandbox Version Members](#)
- [Sandbox Implications on Member Formulas](#)

The HSP_View Dimension

When a cube is enabled for sandboxes, the HSP_View dimension is created with the following members.

- The *BaseData* member defines the data intersection when users are working in the base view in a form. When users are not working in a sandbox, data is stored at the intersection of the *BaseData* member.
- The *SandboxData* member stores the data when a user works with data in a sandbox.
- The *ConsolidatedData* member is dynamically calculated; it retrieves data from the *SandboxData* member if it's available. Otherwise, the *ConsolidatedData* member retrieves data from the *BaseData* member of the base version.

 **Note:**

- You can't change the HSP_View dimension or its members. You should not change the order of the HSP_View dimension in **Performance Settings**. To view **Performance Settings**, from the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
- In a form, the HSP_View member is fixed on the POV and can't be changed.
- Aggregations at the top levels of sparse dimensions are not supported in Sandbox view.

Sample Formula for the ConsolidatedData Member

Assuming that Market is a sparse dimension and that Working is a base version, here is a sample formula for the ConsolidatedData member:

```
IF(@ISLev("Market",0))
IF(@ISLev("Entity",0))
IF (@ISLev("Period", 0))
IF(NOT (@ismbr(@relative("Sandboxes",0))))
BaseData;
ELSE
      IF (SandboxData== #MISSING )
IF(@ISCHILD("Sandboxes_Working"))
      "Working"->BaseData;
ENDIF
      ELSE
SandboxData;
      ENDIF
ENDIF
ENDIF
ENDIF
ENDIF
```

Sandbox Version Members

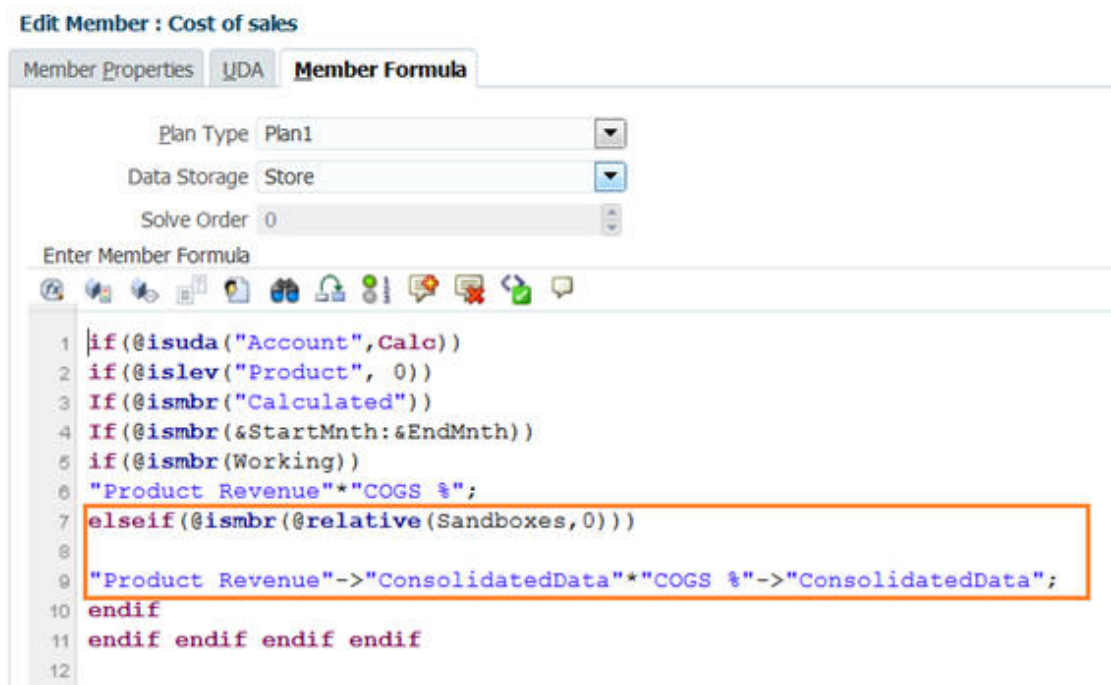
When an application is enabled for sandboxes, a Sandbox member is created under the Version dimension. When a sandbox is created, a Version member is added under the Version Sandbox member, with the name given by the creator of the sandbox. Example:



- The data in the base form is stored at the intersection of the HSP_View BaseData member and the base version (for example, Working).
- The data in the sandbox is stored at the intersection of the respective member from the Version dimension (for example, Sandbox 1) and the HSP_View member SandboxData.

Sandbox Implications on Member Formulas

When you create or modify member formulas, for data to be calculated correctly in both the base and sandbox views, member formulas must refer to the intersection of the HSP_View ConsolidatedData member and the sandbox Version member. Example:



What Happens When a Sandbox is Published?

When a user publishes the data in a sandbox:

- The modified data in the sandbox is saved to the application only for those intersections that are visible in the base view at the time the data is published and only for those cells to which the user has write permission. Sandbox data is saved to the base view in all affected forms and cubes. Even if the user has modified data in multiple forms or different

page/POV combinations, all modified data, supporting detail, and comments are moved to the application.


- The application deletes the sandbox. (Service Administrators can delete sandboxes before the data in them is published. See [Managing Sandboxes](#).)
- If the publish action takes longer than the three minute default, then the job runs in the background and is displayed in the **Job**.

 **Note:**

If multiple users publish sandbox data to the same member in the base view, the most recently published data overwrites previously published data.

Managing Sandboxes

To manage sandboxes:

1. Click **Application**, then click **Overview**, then **Actions**, and then **Manage Sandboxes**.
2. To filter the list of sandboxes, click , and then complete any of these fields:
 - Sandbox Name
 - Base Version
 - Created By
3. To delete sandboxes, click their names, and then **Delete**.

Sandboxes and Other Functionality

- Oracle Smart View for Office:
 - Sandbox functionality is available in Smart View, though you can't create, delete, or publish data from Smart View.
 - In ad hoc analysis, users can see the HSP_View members, which includes sandbox and base data.
 - Selecting the ConsolidatedData member displays the data entered in both the sandbox and the original base data.
 - Sandboxes are supported for Smart Slices, but the HSP_View dimension is hidden.
 - In Planning Admin Extensions, the HSP_View dimension is displayed under **Dimensions**, but you can't change member properties. Likewise, you can't change the member properties of sandbox Version members.
- Financial Reporting: To report on base view data, select the BaseData member of the HSP_View dimension. To report on sandbox data, select the ConsolidatedData member for HSP_View.
- Data Management: The HSP_View dimension is visible in the mappings, but you can map only the BaseData member.
- Migration: If you clone an application using Migration, Oracle recommends that you select the **Sandbox Changes** option. If you're importing sandboxes and data, you must select **Sandbox Changes** if you want to publish the sandbox data.

- Oracle Hyperion Public Sector Planning and Budgeting: Decision Packages and Budget Requests don't support sandboxes.

Defining Valid Intersections and Cell-Level Security

Define rules that restrict who can enter or view data in your application.

You can restrict who can enter data in your application by creating rules that mark certain member intersections as valid (or invalid) for data entry. These rules are called valid intersections. You can also restrict who can view data in your application by creating rules that remove read or write access to cells that a user would normally have access to due to their regular security. These rules are called cell-level security.

- To define valid intersections, see [Defining Valid Intersections](#).
- To define cell-level security, see [Defining Cell-Level Security](#)

Defining Valid Intersections

Define valid intersection rules which filter certain cell intersections to users when they enter data or select runtime prompts.

Related Topics

- [Understanding Valid Intersections](#)
- [Creating Valid Intersections](#)
- [Managing Valid Intersections](#)
- [Suppressing Invalid Data in Forms](#)
- [Clearing Invalid Data](#)
- [Working with Valid Intersections](#)


Understanding Valid Intersections

Valid intersections are cell intersections that are filtered based on rules you define, called valid intersection rules, which filter certain cell intersections to users when they enter data or select runtime prompts. For example, you can specify that certain programs are valid only for some periods or departments. After valid intersections are defined, cells containing invalid data are read-only. This restriction speeds the planning process and optimizes the information available to users.

Conversely, you might have a use case where data entry is allowed in most cell combinations and you only need to prevent data entry to a select few cell combinations. In this case you can ease the definition process by defining invalid intersections. You define invalid intersections in the same way that you define valid intersections except you can specify the invalid intersection definition type while creating the intersection group.

To better understand how valid intersections affect behavior in forms and in runtime prompts, see [Working with Valid Intersections](#).

Videos

Your Goal	Watch This Video
Learn how to manage valid intersections.	 Managing Valid Intersections in Cloud EPM

Related Topics

- [Valid Intersection Groups](#)
- [Valid Intersection Rules](#)
- [Anchor and Nonanchor Dimensions](#)
- [Valid Intersection Examples](#)
- [Redundancy or Overlap in Valid Intersection Rules](#)
- [Shared Members and Valid Intersection Rules](#)
- [Substitution Variables and Valid Intersection Rules](#)
- [Evaluation Order](#)

Valid Intersection Groups

Valid intersection groups define:

- Dimensions to be included
- One of those dimensions as the anchor dimension
- Whether nonanchor dimensions are required or not
- Whether the anchor dimension members not specified or referenced will be valid or invalid

Valid Intersection Rules

Valid intersection rules:

- Must use the same dimensions that were defined within their valid intersection group
- Valid intersection rules within the same valid intersection group that produce an apparent conflict or overlap, are marked valid if either valid intersection rule condition is met
- Valid intersection rules in different valid intersection groups that produce an apparent redundancy or overlap, are marked valid if they satisfy the requirements of all valid intersection groups

Thus, if any valid intersection group marks an intersection invalid, regardless of other valid intersection groups making it valid, the system will mark the intersection invalid. Invalid groups override valid group results.

Note:

If you want to remove valid intersections regardless of what other valid intersection groups allow, then this rule must be in a different valid intersection group.

See [Valid Intersection Examples](#).

Anchor and Nonanchor Dimensions

Anchor and nonanchor dimensions:

- Anchor dimensions are always required dimensions in the cube that is used in the valid intersection evaluation.
- Nonanchor dimensions are either required or not:
 - If a nonanchor dimension is required, any cube that doesn't use that dimension will ignore any valid intersection group where that dimension is tagged as required as it evaluates the valid intersections.
 - If a nonanchor dimension isn't required, any cube that doesn't use that dimension will still evaluate any valid intersection group that includes that dimension as not required and evaluate the intersections of any other dimensions in the valid intersection group in use in the cube.
- Unselected anchor dimension members are valid by default, but you can mark them invalid by clearing the **Unselected Members are Valid** option. This option marks all intersections with anchor dimension members not selected in this rule as invalid.

See [Valid Intersection Examples](#).

Valid Intersection Examples

This section provides valid intersection group and valid intersection rule examples to illustrate a few simple, complex, and edge-case scenarios.

Example: Anchor and Nonanchor Dimensions

The choice of the anchor dimension is critical. Consider the following example, which produces a different result based on the anchor dimension definition:

- Valid intersection group 1 defines Entity as the anchor dimension and Product as a nonanchor dimension.
- Valid intersection group 2 reverses this definition with Product as the anchor dimension and Entity as the nonanchor dimension.

Table 18-1 Example - Anchor Dimension is Entity

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
1	DESC(500 - Manufacturing) - Unselected members are valid	DESC(P_TP1 - Computer Equipment)

Group 1 means entities that are descendants of Manufacturing are valid only with descendant products of Computer Equipment. No other products are valid with descendants of Manufacturing. All other entities besides descendants of Manufacturing are valid with all products, including descendants of Computer Equipment.

Table 18-2 Example - Anchor Dimension is Product

Valid Intersection Group	Anchor Dimension - Product	Nonanchor Dimension - Entity
2	DESC(P_TP1 - Computer Equipment) - Unselected members are valid	DESC(500 - Manufacturing)

Group 2 means products that are descendants of Computer Equipment are only valid with descendant entities of Manufacturing. No other entities are valid with descendants of Computer Equipment. All other products besides descendants of Computer Equipment are valid with all entities, including descendants of Manufacturing.

▲ Caution:

The choice of anchor dimension is significant. You'll get dramatically different results if you choose the wrong anchor dimension.

Example: Required Dimension

In the following example, if a nonanchor dimension isn't required, then the application evaluates all remaining dimension intersections in the valid intersection group for a cube that doesn't contain the nonrequired dimension. This behavior could result in the evaluation of a valid intersection group with only one effective dimension.

Table 18-3 Example - Required vs. Non-Required Nonanchor Dimensions

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
1	DESC(500 - Manufacturing) - Unselected members are valid	DESC(P_TP1 - Computer Equipment) - Not required

In Group 1, the product dimension isn't required, and unselected entities are valid. Therefore, if the cube of the form or business rule, at runtime, doesn't include the product dimension, the application evaluates the entity dimension selections to mark all entities as valid for a cube that doesn't contain the product dimension.

Table 18-4 Example - Required vs. Non-Required Nonanchor Dimensions

Valid Intersection Group	Anchor Dimension - Entity	Nonanchor Dimension - Product
2	DESC(500 - Manufacturing) - Unselected members are invalid	DESC(P_TP1 - Computer Equipment) - Not required

In Group 2, the product dimension isn't required, and unselected entities are invalid. Therefore, if a cube doesn't include the product dimension, then the application evaluates the entity dimension selections to mark all entities except descendants of Manufacturing as invalid. Thereafter, any cube that doesn't use the product dimension will only allow data entry in the descendants of Manufacturing entities.

▲ Caution:

Carefully consider whether a nonanchor dimension is required or not, especially if the result leaves a valid intersection group with only one effective dimension. Additionally, selecting the **Unselected Members are Valid** option for anchor dimension members also plays a significant role in the system behavior for valid intersections. See [Valid Intersection Examples](#).

Example: Unselected Members are Valid

In the following example, two intersection groups are valid. In one group, the anchor dimension unselected members are invalid (this option is cleared). In the other group, the anchor dimension unselected members are valid (this option is selected).

Table 18-5 Example - Unselected Members are Valid

Valid Intersection Group	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(BS - Balance Sheet) - Unselected members are invalid	000 - No Department
2	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales)

Because Group 1 defines all unselected members as invalid, the application marks noninclusive descendants of Balance Sheet invalid. Gross Profit isn't an inclusive descendant of Balance Sheet. So even though Group 2 explicitly states inclusive descendants of Gross Profit are valid with inclusive descendants Sales entities, the invalid definition from Group 1 overrides any further valid intersections of the same anchor dimension member set.

Example: Redundant or Overlapping Valid Intersection Rules Within the Same Valid Intersection Group

When valid intersection rules are within the same valid intersection group and produce any redundancy or overlap, the system marks an intersection valid if either of the valid intersection rule conditions are met.

Table 18-6 Example - Redundant or Overlapping Valid Intersection Rules Within the Same Valid Intersection Group

Valid Intersection Rule	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales)
2	IDESC(NI - Net Income) - Unselected members are valid	IDESC(TD - Total Department)

Because Gross Profit is a descendant of Net Income and Sales is a descendant of Total Department, inclusive descendants of Gross Profit are valid with any inclusive Descendant of Total Department. Rule 1 is a subset of Rule 2, so Rule 1 is effectively a "No operation" rule and is unnecessary. There is no restriction on inclusive descendants of Gross Profit accounts only being valid for inclusive descendants of Sales Entities.

Example: Redundant or Overlapping Valid Intersection Rules in Different Valid Intersection Groups

When valid intersection rules are in different valid intersection groups and produce any redundancy or overlap, the system marks an intersection valid only if it satisfies the requirements of all valid intersection groups.

In the following example, there are redundant or overlapping rules in different groups:

Table 18-7 Example - Redundant or Overlapping Valid Intersection Rules in Different Valid Intersection Groups

Valid Intersection Group	Anchor Dimension - Account	Nonanchor Dimension - Entity
1	IDESC(GP - Gross Profit) - Unselected members are valid	IDESC(403 - Sales) - Required
2	IDESC(NI - Net Income) - Unselected members are valid	IDESC(TD - Total Department) - Not required

Because Group 1 is further restrictive for inclusive descendants of Gross Profit accounts being valid with inclusive descendants of Sales entities, the application enforces this group for these intersections. Other, non-Gross Profit accounts can still use all inclusive descendants of Total Department entities, but inclusive descendants of Gross Profit accounts must use inclusive descendants of Sales entities.

Redundancy or Overlap in Valid Intersection Rules

Valid intersection rules within the same valid intersection group, which produce any apparent conflict or overlap, are marked valid if either valid intersection rule condition is met.

If different valid intersection groups share the same attributes, including the anchor dimension, required and not required nonanchor dimensions, and **Unselected Members are Valid** attribute, they will be treated as rules of the same valid intersection group.

Shared Members and Valid Intersection Rules

Shared members are supported in valid intersection rules. If a base member is selected for a valid intersection rule, any shared members are also included in the rule. Conversely, if a shared member is selected for a valid intersection rule, the base member is also included in the rule.

Substitution Variables and Valid Intersection Rules

You can use substitution variables in valid intersection rules. User variables are not supported. Substitution variables can be set on the Essbase server, application, or database level. The same substitution variable can exist on multiple levels; the application uses the first one it finds as it searches in this order:

1. Database (cube)
2. Application
3. Server

Evaluation Order

Evaluation order for valid intersection groups orders invalid results sets as quickly as possible, increasing the speed and efficiency of the overall valid intersection evaluation.

For example, the application evaluates the first valid intersection group in the list, then the second group, and so on. If the application finds an invalid intersection in the second group in the list, it will stop evaluating the rest of the list because, once an intersection is defined as invalid, it will override other valid intersection rule results.

To change the order in which the groups are evaluated, see [Changing the Valid Intersection Group Evaluation Order](#).

Creating Valid Intersections



You can define rules to filter certain cell intersections to users when they enter data, select members, or select runtime prompts.

To create a valid intersection:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

 **Note:**




If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. Create the valid intersection group:
 - a. Click **Create**.
 - b. Enter a name and description for the new intersection.
 - c. The **Enabled** checkbox is selected by default. To disable the valid intersection group, clear the **Enabled** checkbox. You can also enable or disable a valid intersection group directly on the **Valid Intersections** page. See [Disabling and Enabling Valid Intersection Groups](#).
 - d. For **Definition Type**, select one of the following:
 - **Valid Intersection**
 - **Invalid Intersection**
 - e. To select the anchor dimension for the intersection group, click  next to **Select Anchor Dimension**.
 - f. **Optional:** By default, the anchor dimension members that are not specified in the valid intersection rule are marked valid. To clear this option, click  next to the anchor dimension, and then click **Unselected members are valid**.

For an explanation of this option and for an example of how it's used, see [Anchor and Nonanchor Dimensions](#).
 - g. To select additional dimensions (called nonanchor dimensions), click **Add Dimension**.

 **Note:**


If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.


3. To search the entire listing for certain intersections, enter search criteria in the **Search** box and then click  to display only the intersections that meet the search criteria.
4. To filter the listing so it displays only the intersections that meet the filter criteria, specify the following filter options:
 -  : Click to display the **Filter** page where you can select from a robust list of filter options. For a complete list of filter options and their descriptions, see [Filtering Valid Intersections](#).
 -  : Click to clear all filters.
 - **Enabled**: Filters the list so you view only the intersections that are enabled (**Yes**), not enabled (**No**), or select **All**.
 - **Definition Type**: Filters the list so you view only the intersections that are the **Valid Intersection** or **Invalid Intersection** types, or select **All**.
5. You can also perform these tasks on the **Valid Intersections** page:
 - **Actions** menu: To import and export valid intersections, see [Importing and Exporting Intersections](#).
 - **Create**: See [Creating Valid Intersections](#).
 - **Refresh**: Click to refresh the intersections listing.
6. For each listing on the intersections page you can perform the following tasks:
 - **Enabled** column: Indicates whether an intersection is enabled. Click the check mark next to the intersection to disable or enable it. A green check mark indicates that the definition is enabled. See [Disabling and Enabling Valid Intersection Groups](#).
 - **Action** column: Click **•••** to edit, duplicate, or delete an intersection, or to move it up or down in the listing order. See the following topics:
 - [Changing the Valid Intersection Group Evaluation Order](#)
 - [Editing Details for a Valid Intersection Group](#)
 - [Duplicating Valid Intersection Groups](#)
 - [Deleting a Valid Intersection Group](#)

Filtering Valid Intersections

You can filter the list of intersections by certain criteria such as whether the intersection is enabled or not, whether the definition is valid or invalid, when it was modified, and by whom. When you filter, only the intersections that meet the filter criteria are displayed on the **Valid Intersections** page.

To filter intersections:

1. Click **Application**, and then click **Valid Intersections**.
2. Click  to specify filter criteria:

- **Enabled:** View only the intersections that are enabled (**Yes**), not enabled (**No**), or select **All**.
 - **Definition Type:** View only the intersections that are the **Valid Intersection** or **Invalid Intersection** types, or select **All**.
 - **Modified:** View only the intersections that were modified before or after a certain date and time, or the intersections modified within a range of dates or times. Select **After**, **Before**, or **Between** and then click  to specify the date and time criteria.
 - **Modified By:** View only the intersections modified by selected users.
3. Click **More** to further refine the filter criteria:
 - **Dimensions**
 - **Anchor Dimensions**
 - **Unselected members are valid:** Choose **Yes**, **No**, or **All**.
 - **Additional Dimensions Required:** Choose **Yes**, **No**, or **All**.
 4. Click **Apply**.

Importing and Exporting Intersections

About Importing and Exporting Valid Intersections

You can export the filtered list of valid intersections from the listing page to a location on your local computer, or you can export them to the server. If no filter is defined on the listing page, then all intersections are exported.

Use the Import action to import intersections into the application from a location on your local computer or import them from the server. When you perform an import, the system tests the import file for anything that might break a definition; for example, if a cube is missing, or if an anchor dimension doesn't exist, or if a subrule is not found, errors are logged in the error file. Import jobs will only complete successfully if the import file has no errors.

Note:

Subrules provide information about the content of the rules such as the member selection or exclusion for anchor and non anchor dimensions, and the restriction type applied for each subrule.

Depending on the export or import location you choose, the intersections are exported or imported in either an Excel file format (XLSX) or a zip file format.

Note:

Locked valid intersection rules are not exported when you export valid intersections. Locked valid intersection rules (and rules that start with restricted prefixes such as FCCS_, OCX_, OEP_, OFS_, OPF_, OWP_, TRCS_) are not imported when you import valid intersections.

Valid Intersections Import File

The Excel import file must have two sheets with the following names for the first and second sheets:

1. Rules
2. Sub Rules

The `Rules` sheet has the following column headings:

- **Name**
- **Position**
- **Description**
- **Enabled**
- **Definition Type**
- **Anchor Dim Name**
- **Anchor Dimension Apply to Selected Members**
- **Dim1**
- **Dim1 Required**
- **Dim2**
- **Dim2 Required**
- **DimX**
- **DimX Required**

The `Sub Rules` sheet has the following column headings:

- **Name** - This column must contain the name of the Rule from the first sheet
- **Anchor Members**
- **Anchor Exclusion**
- **Anchor Exclusion All**
- **Dim1 Members**
- **Dim1 Exclusion**
- **Dim1 Exclusion All**
- **Dim2 Members**
- **Dim2 Exclusion**
- **Dim2 Exclusion All**
- **DimX Members**
- **DimX Exclusion**
- **DimX Exclusion All**


Exporting and Importing Valid Intersections

To export and import intersections:

1. Click **Application**, and then click **Valid Intersections**.

2. Apply filters to the listing, as needed. See [Filtering Valid Intersections](#).
3. To export, click **Actions**, then **Export**, and then select the target location for the export file:
 - **Local**: Saves the export file to a location on your local computer. If you choose this option, click **Export**, and then specify where to save the export file.
 - **Outbox**: Runs a job that saves the export file in a zip format to the server which you can download now or use to schedule an export job later. If you choose this option, click **Save and Run Job**.

To download the export file from the Outbox:

 - a. Click **Application**, and then click **Jobs**.
 - b. Under **Recent Activity** click the export job.
 - c. On the **Job Details** page, click  to select a download location for the export file. You can also download the export file from the Inbox/Outbox Explorer for your business process.
4. If editing the export file in Excel, note that the Excel file has two sheets: `Rules` and `Sub Rules`.
5. To import, click **Actions**, then **Import**, and then select the location of the import source file:
 - **Local**: Loads the import file from a location on your computer. For **Source File**, click **Browse** to select the import file on your computer, and then click **Import**.
 - **Inbox**: Runs a job that loads the import file from the server. The import file must be in a zip file format. Enter the name of the file in **Source File**, click **Save and Run Job**, and then specify the **Name** and **Error File** on the **Save as Job** dialog. The error file provides information about the intersections that were not imported. You can download the error file from the Inbox/Outbox Explorer for your business process.

Changing the Valid Intersection Group Evaluation Order

Evaluation order for intersection groups orders invalid results sets as quickly as possible, increasing the speed and efficiency of the overall intersection evaluation.

To learn more about evaluation order, see [Evaluation Order](#).

To change the position of a valid intersection group in a list:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

Note:

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. To the right of the intersection group in the listing, click **•••**.
4. Select **Move Up** or **Move Down**.

Tip:

You can also drag intersection groups to move them up and down in the list.

Disabling and Enabling Valid Intersection Groups

Intersection groups, by default, are enabled at the time of creation. If you don't want an intersection group to be evaluated or used, you can disable it on the **Valid Intersections** page. When an intersection group is disabled, the intersection rule for that group no longer applies when viewing application forms, business rules, or runtime prompts. You can also reenable a disabled intersection group.

To disable and enable an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

 **Note:**

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. In the Enabled column of the intersection list, click the check mark next to the intersection group that you're disabling or enabling.

 **Note:**

The check mark is green if the group is enabled.

4. Ensure that any remaining groups that are enabled are still listed in the correct evaluation order in the intersections list. If they are not, then move them up or down in the order.

See [Changing the Valid Intersection Group Evaluation Order](#).

Editing Details for a Valid Intersection Group

To edit intersection group details, you work with dimension members in the member selector. You can also define exclusions in intersection rules.

To edit intersection group details:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.





 **Note:**

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.

3. Click the name of the intersection group you want to edit.

 **Note:**

A pagination bar displays at the bottom of the rules page. If you have a large number of rules, you can use the pagination bar to easily navigate between the rules pages and to jump to a specific page. The page size options (number of rules per page), which you can select on the pagination bar, are **25**, **50**, **100**, and **All**. (Note that the **All** option isn't available if you have more than 300 rules.)

- To edit dimension details, next to the dimension, click  to select the members to include, exclude, or remove in the intersection rule:
 - Click **Edit** to open the **Select Members** page and select members, substitution variables, and attributes to include in the intersection rule. You can also type in the members or functions.
See [Using the Member Selector](#).
 - Click **Exclude** or **Exclude All** to define the dimension members you want to exclude from the rule:
 - * **Exclude**: Selecting this option excludes members by ID. Only the specified members (base or shared) will be excluded.
 - * **Exclude All**: Selecting this option excludes members by name. If a base member is specified, then the base and all of its shared members will be excluded. If a shared member is specified, then this member, its base member, and all other shared members of this member will be excluded.
 - Click **Clear** to clear the selection.
 - To delete a dimension from an intersection group, next to the dimension, click , and then click .
 - To remove a rule from an intersection group, click .
 - To add a dimension or a rule to an intersection group, click **Add Rule** or **Add Dimension**.
4. Click **Save and Close**.

Duplicating Valid Intersection Groups

To speed intersection group creation, you can duplicate an existing intersection group and then edit it.

To duplicate an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.
3. Click **•••** to the right of the intersection group you want to duplicate, and then select **Duplicate**.

The duplicate group is added to the end of the intersections list with the word "Copy" appended to the name.

4. Open the intersection group and edit it.

5. Reorder the intersection groups, if needed. See [Changing the Valid Intersection Group Evaluation Order](#).

Deleting a Valid Intersection Group

After a group is deleted, the intersection groups are reordered. If there are three intersection groups, and the second one in the order is deleted, the third intersection group becomes number two.

To delete an intersection group:

1. Click **Application**, and then click **Valid Intersections**.
2. If it isn't already selected, click the **Setup** tab.

Note:

If Redwood Experience is enabled, the **Setup** tab is at the bottom of the page.



3. Click **•••** to the right of the intersection group that you want to remove, and then select **Delete**.
4. Reorder the remaining intersections, if needed. See [Changing the Valid Intersection Group Evaluation Order](#).

To delete an intersection rule from an intersection group, see [Editing Details for a Valid Intersection Group](#).

Suppressing Invalid Data in Forms

Suppressing invalid data hides rows or columns in application forms that contain invalid data. If this option isn't selected, then the application displays rows or columns that contain cells with data that are invalid. Cells with invalid data are read-only.

To suppress invalid data in forms:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Forms**.
2. Select the form, click , and then click **Layout**.
3. Under **Grid Properties**, select **Suppress invalid data - Rows** and/or **Suppress invalid data - Columns**.
4. Click **Save**.

Clearing Invalid Data

Related Topics

- [About Invalid Data](#)
- [Working With Invalid Intersection Reports](#)
- [Clearing Data at Invalid Intersections](#)

About Invalid Data

If data already exists at intersections, then adding or modifying valid intersections invalidates the existing data. Creating a valid intersection rule or modifying an existing valid intersection rule doesn't clear data in the invalid intersections. You must generate a valid intersection rule report, which will show where data exists at invalid intersections, and then determine whether to clear the data.

 **Note:**

Data may remain at an invalid intersection for historical purposes or for use in forward looking scenarios. Therefore, it's not a requirement to clear data at invalid intersections.

Working With Invalid Intersection Reports

You can view reports that show data at invalid intersections on the **Reports** tab of the **Valid Intersections** page. **Invalid Intersection Reports** lists existing reports, their status, and the last time they were run.

To work with invalid intersection reports:

1. Click **Application**, then **Valid Intersections**, and then click the **Reports** tab.

 **Note:**

If Redwood Experience is enabled, the **Reports** tab is at the bottom of the page.




2. Perform a task:
 - To refresh the listing, click **Refresh**.
 - To create a report, click **Create**, name the report, select the cube, choose the scope of the report, and then select when to run the report. You can run the report now or run the report later by saving it as a job. To save a report without running it, click **Save and Close**. To remove a report after it's run, click **Remove Reports**.

 **Note:**

Invalid intersection reports are not supported for aggregate storage cubes. Aggregate storage cubes are not listed in the **Cube** drop-down list.

Also in an invalid intersection report, any Entity/Scenario/Version dimension combinations are treated as planning units or point of view dimensions, and you can select only one member for each dimension. Additional dimensions allow function selections like `IDESCENDANTS (<member_name>)`.

- To edit a report, click , and then **Edit**.

- To copy a report, click , and then **Duplicate**.
- To run a report, click , and then **Run**.
- To delete a report, click , and then **Delete**.

Clearing Data at Invalid Intersections

Users with appropriate permissions can clear the invalid data if the data isn't needed. To clear invalid data, run the report, and then click **Clear Invalid Intersections**.

Working with Valid Intersections

Related Topics

- [Working with Valid Intersections in Application Forms](#)
- [Working with Valid Intersections in Calculation Manager Rule Runtime Prompts](#)

Working with Valid Intersections in Application Forms

Using valid intersections prevents data entry for invalid intersections as defined in the applicable valid intersection group. The affected cells in the form display as read-only following standard, read-only color coding. If you hover the cursor over an invalid intersection, a tool tip displays indicating the cell is read-only because it's defined as an invalid intersection.

The valid intersection group applies first to the form point of view and page axis. If the point of view intersections are all invalid, then a warning message is displayed, and the form doesn't render a data grid until a valid intersection is selected.

If the point of view has valid intersections, then the rows and columns are filtered to restrict data entry at invalid intersections. If the **Suppress Invalid Data** option for the form is enabled, then the form suppresses invalid rows, columns, or both, as appropriate.

Any rows or columns, which consist of a mix of valid and invalid intersections, display those intersections as valid or invalid, as appropriate. Invalid intersections are displayed with standard, read-only shading and preclude data entry.

Application users can reset the point of view to the default, unfiltered list without closing and reopening the form by clearing the selections. Application users can also clear a selection, thus opening up more selections for other dimensions. They will not be able to render a form with a dimension cleared, because valid members must be selected for each dimension.

In the member selector, invalid members are suppressed due to valid intersection rules. Application users can display invalid members in the member selector using the **Show Invalid Members** option. Invalid members are displayed but are unavailable for selection.

Note:

Valid intersection groups don't grant access to dimension members. Valid intersection groups further restrict the valid intersections of dimension members already granted to an application user.

Table 18-8 Form Behavior if Valid Intersections are Applied

Action	Behavior
Open a form	The form renders with member selections as defined in the form definition, adhering to the user's access rights for dimensions, and applies valid intersection groups with the most recently used as current selections.
Select members from a point of view dimension	<p>The application:</p> <ul style="list-style-type: none"> • Enables users to select a member on the point of view • In the member selector for a point of view dimension, enables users to select from a filtered list of remaining valid intersections, which is based on the members that were selected for the other point of view dimensions • Ignores the order in which point of view dimension members are selected because selecting a member from any dimension included in a valid intersection group dynamically filters the remaining dimension members lists for those dimensions included in the valid intersection group, as appropriate, when that dimension is selected • Provides the option to hide invalid members from dimension lists or display them as unselectable in the point of view • Provides the ability to reset the point of view to the fully unfiltered list without closing and reopening the form by clearing the selections <p>Note that ad hoc forms, both in Web and Oracle Smart View for Office, will not filter page or point of view members according to valid intersection groups.</p>
Select Go to render a form based on point of view selections. You can also click the right arrow in the form point of view.	The form renders as defined based on the valid point of view intersections.
Enter and save data	The form data is entered and saved.

Working with Valid Intersections in Calculation Manager Rule Runtime Prompts

Valid intersection groups apply to runtime prompts when launched from within the context of the application. Runtime prompts will prevent users from selecting invalid intersections as defined in the valid intersection groups.

Filtering according to valid intersection groups isn't supported in Oracle Smart View for Office forms. The rule, however, will not launch if you choose an invalid intersection in the runtime prompts both in the Web and in Smart View.

Table 18-9 Runtime Prompt Behavior if Valid Intersections are Applied

Action	Behavior
Launch a Calculation Manager rule runtime prompt	<p>The application:</p> <ul style="list-style-type: none"> • Prevents the user from selecting invalid intersections within the runtime prompt based on the valid intersection group • Prevents the Calculation Manager rule from executing if there are invalid intersections in the runtime prompts
Enter valid intersections	The valid intersection is allowed to be entered.

Defining Cell-Level Security

Define security rules which restrict users and groups from viewing data in certain cell intersections in forms.

Related Topics

- [Understanding Cell-Level Security](#)
- [Creating Cell-Level Security Definitions](#)
- [Viewing Cell-Level Security Definitions](#)
- [Filtering Cell-Level Security Definitions](#)
- [Importing and Exporting Cell-Level Security Definitions](#)
- [Testing Cell-Level Security](#)
- [Reordering the Cell-Level Security Definitions List](#)

Understanding Cell-Level Security

About Cell-Level Security

Service Administrators applying cell-level security can deny access to cells that a user would normally have access to due to their regular security. Cell-level security is therefore defined as an exception to the existing member security. For example, a Department Manager requires access to all accounts in their own department, but only a certain account in all other departments. With the usual metadata security the Manager would have access to all accounts across all departments, but using cell-level security enables the Service Administrator to control the intersection of all accounts with the Manager's department and only the specific account in all other departments.



Cell-level security uses rules, similar to valid intersection rules, to deny read or write access to users viewing certain cell intersections anywhere a cell is shown (for example, forms, runtime prompts, Smart View, reports, dashboards, infolets, and so on). When cell-level security rules are applied, users with read access can see the data value in a cell but the cell is not editable. If users are denied read access to a cell, the value displayed in the cell is #noaccess.

If you are a Service Administrator, you can define and assign cell-level security rules to any user or group. Cell-level security doesn't affect you.

Anchor and Nonanchor Dimensions





Cell-level security definitions use anchor and nonanchor dimensions:

- Anchor dimensions are always required dimensions in the cube that is used in the cell-level security definition.
- Nonanchor dimensions are either required or not:
 - If a nonanchor dimension is required, any cube that doesn't use that dimension will ignore any cell-level security definitions where that dimension is tagged as required.
 - If a nonanchor dimension isn't required, any cube that doesn't use that dimension will still evaluate any cell-level security definition that includes that dimension as not required and evaluate the definitions of any other dimensions in the definition in use in the cube.


- By default, nonanchor dimensions aren't required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.
- By default, the anchor dimension members that are not specified in the rule are included in the security definition, but you can clear this option by clicking  next to the anchor dimension, and then clicking **Apply to Selected Members Only**.

Creating Cell-Level Security Definitions

To create a cell-level security definition:

1. Click **Application**, and then click **Cell-Level Security**.
2. Create the definition:
 - a. Click **Create**.
 - b. Enter a name and description for the definition.
 - c. The **Enabled** checkbox is selected by default. To disable the definition, clear the **Enabled** checkbox. You can also enable or disable a definition directly on the **Cell-Level Security Definitions** page.
 - d. To define cube-specific security, click **Cubes** and select from the list of cubes or select **All**.
 - e. An anchor dimension is required. To select the anchor dimension, click **Select Anchor Dimension**. For information about anchor and nonanchor dimensions, see [Understanding Cell-Level Security](#)
 - f. **Optional:** By default, the anchor dimension members that are not specified in the rule are included in the security definition. To clear this option, click  next to the anchor dimension, and then click **Apply to Selected Members Only**.
 - g. To select additional dimensions (called nonanchor dimensions), click **Add Dimension**.
 - h. **Optional:** By default, nonanchor dimensions are not required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.
3. Define the cell-level security rule:
 - a. Click **Add Rule**.
 - b. In the **Users, Groups** column, click  to find the users and groups to include in the cell-level security rule.
 - c. For **Restriction**, choose **Deny Read** (default) or **Deny Write**. **Deny Read** is the default option because it is the most restrictive. If users are denied read access to a cell, the value displayed in the cell is #noaccess. Users with **Deny Write** access can see the data value in a cell but the cell is not editable.
 - d. Click  next to the dimensions in the new rule:
 - Click **Edit** to open the **Select Members** page and select the members, substitution variables, and attributes to include in the cell-level security rule.
 - Click **Exclude** or **Exclude All** to define the dimension members you want to exclude from the rule:
 - **Exclude:** Selecting this option excludes members by ID. Only the specified members (base or shared) will be excluded.

- **Exclude All:** Selecting this option excludes members by name. If a base member is specified, then the base and all of its shared members will be excluded. If a shared member is specified, then this member, its base member, and all other shared members of this member will be excluded.
- Click **Clear** to clear the selection.

To delete a rule, click .




4. Click **Save**.


The new cell-level security definition is added to the end of the list. Definitions are evaluated in the order they appear in the list. To reorder the definitions list, see [Reordering the Cell-Level Security Definitions List](#).

After a definition is created, you can test it in a form to see how the form will look from a user's perspective. See [Testing Cell-Level Security](#).

Viewing Cell-Level Security Definitions

To view cell-level security definitions:



1. Click **Application**, and then click **Cell-Level Security**.
2. To search the entire listing for certain definitions, enter search criteria in the **Search** box and then click  to display only the definitions that meet the search criteria.
3. To filter the listing so it displays only the definitions that meet the filter criteria, specify the following filter options:
 - : Click to display the **Filter** page where you can select from a robust list of filter options. For a complete list of filter options and their descriptions, see [Filtering Cell-Level Security Definitions](#).
 - : Click to clear all filters for **Effective Assignment**, **Enabled**, and **Restriction**.
 - **Effective Assignment:** Filters the list so you view only the definitions that effect certain users or groups.
 - **Enabled:** Filters the list so you view only the definitions that are enabled (**Yes**), not enabled (**No**), or select **All**.
 - **Restriction:** Filters the list so you view only the definitions that are assigned the **Deny Read** or **Deny Write** restriction, or select **All**.
4. You can also perform these tasks on the **Cell-Level Security Definitions** page:
 - **Actions** menu: To import and export definitions, see [Importing and Exporting Cell-Level Security Definitions](#).
 - **Test:** See [Testing Cell-Level Security](#).
 - **Create:** See [Creating Cell-Level Security Definitions](#).
 - **Refresh:** Click to refresh the definitions listing.
5. For each listing on the definitions page you can perform the following tasks:
 - **Enabled** column: Indicates whether a definition is enabled. Click the check mark next to the definition to disable or enable it. A green check mark indicates that the definition is enabled.

- **Action** column: Click  to edit, duplicate, or delete a definition, or to move it up or down in the listing order.

Filtering Cell-Level Security Definitions

You can filter the list of cell-level security definitions by certain criteria such as by cube, by restriction, or by date. When you filter, only the definitions that meet the filter criteria are displayed on the **Cell-Level Security Definitions** page.

To filter cell-level security definitions:

1. Click **Application**, and then click **Cell-Level Security**.
2. Click  to specify filter criteria:
 - **Cubes**: View only the definitions in the selected cube or cubes, or select **All**.
 - **Enabled**: View only the definitions that are enabled (**Yes**), not enabled (**No**), or select **All**.
 - **Restriction**: View only the definitions that are assigned the **Deny Read** or **Deny Write** restriction, or select **All**.
 - **Modified**: View only the definitions that were modified before or after a certain date and time, or the definitions modified within a range of dates or times. Select **After**, **Before**, or **Between** and then click  to specify the date and time criteria.
 - **Modified By**: View only the definitions modified by selected users.
 - **Effective Assignment**: View only the definitions that effect the selected users or groups.
3. Click **More** to further refine the filter criteria:
 - **Dimensions**
 - **Anchor Dimensions**
 - **Anchor Dimension: Apply to Selected Members Only**: Choose **Yes**, **No**, or **All**.
 - **Additional Dimensions Required**: Choose **Yes**, **No**, or **All**.
4. Click **Apply**.

Importing and Exporting Cell-Level Security Definitions

About Importing and Exporting Cell-Level Security Definitions

You can export the filtered list of cell-level security definitions from the listing page to a location on your local computer, or you can export them to the server. If no filter is defined on the listing page, then all cell-level security definitions are exported.

Use the Import action to import cell-level security definitions into the application from a location on your local computer or import them from the server. When you perform an import, the system tests the import file for anything that might break a definition; for example, if a cube is missing, or if an anchor dimension doesn't exist, or if a subrule is not found, errors are logged in the error file. Import jobs will only complete successfully if the import file has no errors.

 **Note:**

Subrules provide information about the content of the rules such as the user assignment for each member of the rule (subrule), the member selection or exclusion for anchor and non anchor dimensions, and the restriction type applied for each subrule.

Depending on the export or import location you choose, the application definitions are exported or imported in either an Excel file format (XLSX) or a zip file format.

Cell-Level Security Import File

The Excel import file must have two sheets with the following names for the first and second sheets:

1. Rules
2. Sub Rules

The `Rules` sheet has the following column headings:

- **Name**
- **Position**
- **Description**
- **Enabled**
- **Valid Cubes** - This column can contain either `All` or a list of comma-separate names of cubes, such as `Plan1, Plan2`
- **Anchor Dim Name**
- **Anchor Dimension Apply to Unselected Members**
- **Dim1**
- **Dim1 Required**
- **Dim2**
- **Dim2 Required**
- **DimX**
- **DimX Required**

The `Sub Rules` sheet must have the following column headings:

- **Name** - This column must contain the name of the Rule from the first sheet
- **Users**
- **User Groups**
- **Restriction** This column can contain `Deny Read` or `Deny Write`
- **Anchor Members**
- **Anchor Exclusion**
- **Anchor Exclusion All**
- **Dim1 Members**


- **Dim1 Exclusion**
- **Dim1 Exclusion All**
- **Dim2 Members**
- **Dim2 Exclusion**
- **DimX Members**
- **DimX Exclusion**
- **DimX Exclusion All**

Exporting and Importing Cell-Level Security Definitions

To export and import cell-level security definitions:

1. Click **Application**, and then click **Cell-Level Security**.
2. Apply filters to the listing, as needed. See [Filtering Cell-Level Security Definitions](#).
3. To export, click **Actions**, then **Export**, and then select the target location for the export file:
 - **Local**: Saves the export file to a location on your local computer. If you choose this option, click **Export**, and then specify where to save the XLSX export file.
 - **Outbox**: Runs a job that saves the export file in a zip format to the server which you can download now or use to schedule an export job later. If you choose this option, click **Save and Run Job**.

To download the export file from the Outbox:


- a. Click **Application**, and then click **Jobs**.
 - b. Under **Recent Activity** click the **Export CLS** job.
 - c. On the **Job Details** page, click  to select a download location for the cell-level security export file. You can also download the export file from the Inbox/Outbox Explorer for your business process.
4. If editing the export file in Excel, note that the Excel file has two sheets: **Rules** and **Sub Rules**.
 5. To import, click **Actions**, then **Import**, and then select the location of the import source file:
 - **Local**: Loads the import file from a location on your computer. For **Source File**, click **Browse** to select the import file on your computer, and then click **Import**.
 - **Inbox**: Runs a job that loads the import file from the server. The import file must be in a zip file format. Enter the name of the file in **Source File**, click **Save and Run Job**, and then specify the **Name** and **Error File** on the **Save as Job** dialog. The error file provides information about the definitions that were not imported. You can download the error file from the Inbox/Outbox Explorer for your business process.

Testing Cell-Level Security

After defining cell-level security and enabling it, you can test it to see what an effected user would see when they view a form. Testing ensures that users are seeing only the cell values they are allowed to see and nobody is seeing more than they should. To test a definition, you must enable it.

To test cell-level security:

1. Click **Application**, and then click **Cell-Level Security**.

2. Enable the definition you want to test.
3. Click **Test**, and then select the form that you want to test.
4. In the **Select or Enter a User Name** text box, specify a user name or click  to select a user, and then click OK.

 **Note:**

You can test only one user at a time.

The form displays the user access to each cell as Read, Write, or None.

Reordering the Cell-Level Security Definitions List

Cell-level security definitions are evaluated in the order they appear on the definitions list; for example, the application evaluates the first cell-level security definition in the list, then the second definition, and so on.

To change the position of a cell-level security definition in the list:

1. Click **Application**, and then click **Cell-Level Security**.
2. To the right of the cell-level security definition, click **...**.
3. Select **Move Up** or **Move Down**.

 **Tip:**

You can also drag cell-level security definitions to move them up and down in the list.

19

Defining Data Maps and Creating File-Based Integrations

Define data maps to move data, comments, attachments, and supporting detail from source cubes and Smart Lists to target reporting cubes to consolidate data.

Data Integration is the mechanism by which integration processes are performed in Oracle Enterprise Performance Management Cloud. You can define file-based and direct integration sources, create mapping rules to translate source data in the required target format, and execute and manage the periodic data loading process. To learn how to create a file-based integration see *Creating File-Based Integrations in Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

To learn how to define data maps, see *Defining Data Maps in Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Managing Jobs

Schedule jobs to perform common administrative tasks and lighten your workload. You can start jobs right away or schedule jobs to run later at intervals.

Related Topics

- [How Jobs Save You Time](#)
- [Viewing the Status of Jobs](#)
View pending jobs and recent activity on the Jobs console.
- [Scheduling Jobs](#)
- [Editing and Canceling Jobs](#)
- [Duplicating Jobs](#)
- [Canceling Rules Jobs and Ruleset Jobs](#)
- [Downloading Export Files From Your Outbox](#)
- [Viewing Task Manager Jobs](#)

How Jobs Save You Time

Jobs are actions such as exporting data or refreshing the database, which you can start right away or schedule to run later at intervals. To lighten your workload, define jobs to perform common administrative tasks such as:

- Importing and exporting metadata and data
- Refreshing the database
- Mapping cubes

Viewing the Status of Jobs



View pending jobs and recent activity on the Jobs console.

The Jobs console lists jobs that are in a pending state under **Pending Jobs**. Jobs that are processing, have run and are completed, or have errors are listed under **Recent Activity**.


Jobs are retained in the Jobs console for 90 days.

To view the status of jobs:

1. Click **Application**, and then click **Jobs**.
2. Perform a task:

- To filter jobs and activity by criteria such as date or job type, click  .
- To search for a job by name, enter text in the **Search**, and then click  .
- To view a job's details, click the job.

 **Note:**


- The application is automatically refreshed during an application upgrade. If any refresh errors occur during an application upgrade, you can view the errors on the Jobs page. These errors are captured in the job called **Content Update**.
- The **Recent Activity** list on the **Jobs** page defaults to display only the last day's data. Similarly, the job filter's **Start Time** and **End Time** dates default to yesterday and today to have only a one day difference. Click  to change the default display.
- Jobs older than 90 days are purged.

Scheduling Jobs

To schedule jobs:

1. Click **Application**, then **Jobs**, and then click **Schedule Jobs**.
2. Specify the following:
 - The type of job you're creating. For a list of jobs and descriptions, see [Job Types](#).
 - When to run the job. You can schedule a job to run now or to run later. If scheduling the job to run later, see [Scheduling Jobs to Run Later](#).
3. Click **Next**.
4. Select a job from the job list. Depending on the job type, there may be additional options and considerations. See [Job Types](#).

 **Note:**


- You can run up to five import or export jobs at one time.
- For export jobs, you can specify a unique output file name for each job. From the job listing page, click  next to the selected job and specify the output file name with a zip extension. The unique file name you specify will override the default export file name when the job runs.
- To prevent automatic backup from failing due to certain jobs running during daily maintenance, EPM Cloud disallows certain jobs from starting while the daily maintenance process is running. If the system prevents a job from starting, the reason will be stated in the Job Details. If you've enabled email notifications for the Job Console, you'll receive an email notification when a job does not start. If you have a job that is scheduled to start during the daily maintenance process, it is recommended that you reschedule your job to start outside of the daily maintenance window. See [Setting the Daily Maintenance Process Start Time](#).

5. Click **Next**.
6. Review your choices. If satisfactory, click **Finish**.

To edit or cancel a job after scheduling it, see [Editing and Canceling Jobs](#).

Job Types

Table 20-1 Job Types

Job Type	Description
Rules	<p>Runs a rule that you select.</p> <p>Note the following:</p> <ul style="list-style-type: none"> You can filter the rules list by cube and by rule type. You must click the check mark next to the rule you want to run before you can proceed. For rules jobs with runtime prompts, clicking the check mark next to a rule will display the runtime prompt parameters. Set the runtime prompt values with which to run the rule in the job scheduler, and then click OK. Hidden runtime prompts will pick up the default values that were set at design time in Calculation Manager. <p>See About Rules.</p>
Import Data*	<p>Performs a data import that was saved as a job.</p> <p>See Importing Data.</p>
Import Exchange Rates	<p>Imports exchange rates for a simplified multicurrency application.</p> <p>See Importing Exchange Rates for a Simplified Multicurrency Application.</p>
Import Metadata*	<p>Performs a metadata import that was saved as a job.</p> <p>See Importing Metadata.</p>
Import Cell-Level Security Definition	<p>Imports a cell-level security definition that was saved as a job.</p> <p>See Importing and Exporting Cell-Level Security Definitions.</p>
Import Valid Intersections	<p>Imports valid intersections that were saved as a job.</p> <p>See Importing and Exporting Intersections.</p>
Export Data*	<p>Performs a data export that was saved as a job.</p> <p>You can specify a unique output file name for each Export Data job.</p> <p>From the job list, click  next to the selected job and specify the Output File Name using a zip extension. You can verify the export file name on the Review page. The unique file name will override the default export file name when the job runs.</p> <p>See Exporting Data.</p>

Note:

The driver/column dimension in the Export Data job definition needs to be dense.

Table 20-1 (Cont.) Job Types

Job Type	Description
Export Metadata*	<p>Performs a metadata export that was saved as a job.</p> <p>You can specify a unique output file name for each Export Metadata job. From the job list, click  next to the selected job and specify the Output File Name using a zip extension. You can verify the export file name on the Review page. The unique file name will override the default export file name when the job runs.</p> <p>See Exporting Metadata.</p>
Export Cell-Level Security Definitions	<p>Exports a cell-level security definition that was saved as a job.</p> <p>See Importing and Exporting Cell-Level Security Definitions.</p>
Export Valid Intersections	<p>Exports valid intersections that were saved as a job.</p> <p>See Importing and Exporting Intersections.</p>
Refresh Database*	<p>Refreshes the application database.</p> <p>See Refreshing Application Databases.</p>
Data Map	<p>Performs a data mapping operation.</p> <p>See Defining Data Maps in <i>Administering Data Integration for Oracle Enterprise Performance Management Cloud</i>.</p>
Invalid Intersection Reports	<p>Runs a report that shows where data exists at invalid intersections.</p> <p>See Working With Invalid Intersection Reports.</p>
Clear Cube*	<p>Performs a cube clearing operation.</p> <p>See Creating Clear Cube Jobs.</p>
Restructure Cube*	<p>Performs a full restructure of a block storage cube to eliminate or reduce fragmentation. This will also remove empty blocks. Running this job won't push any changes from the business process to Essbase.</p> <p>See Improving Cube Performance.</p>
Compact Outline*	<p>Compacts the outline file of an aggregate storage cube. Compaction helps keep the outline file at an optimal size. Compacting the outline doesn't clear the data. Running this job won't push any changes from the business process to Essbase.</p> <p>See Improving Cube Performance.</p>
Merge Data Slices*	<p>Merges incremental data slices of an aggregate storage cube. Fewer slices improve a cube's performance. You can merge all incremental data slices into the main database slice or merge all incremental data slices into a single data slice without changing the main database slice. You can optionally remove cells that have a value of zero.</p> <p>See Improving Cube Performance.</p>
Optimize Aggregation*	<p>Generates optimized views based on collected query tracking information in an aggregate storage cube.</p> <p>For additional option descriptions, see Improving Cube Performance.</p>
Administration Mode	<p>Changes the login level for a business process. If you select Administrators, all non-administrative users will be logged off from the application after job execution. To restore access to an application for all users, select All users.</p> <p>See What Application and System Settings Can I Specify?</p>

Table 20-1 (Cont.) Job Types

Job Type	Description
Execute Bursting Definition	<p>Runs a report bursting job</p> <p>If you're using the next-generation Reports reporting solution, the bursting feature enables you to run a single report or book for more than one member of a single dimension for one data source, and publish a PDF output for each member.</p> <p>See "Working with Bursting" in <i>Designing with Reports for Oracle Enterprise Performance Management Cloud</i>.</p>
Auto Predict	<p>Runs an Auto Predict job definition.</p> <p>When you run the prediction job, historical data for each member in the Auto Predict definition is retrieved and then analyzed using time series forecasting techniques to predict the future performance for these members. Running the prediction as a job is useful when you have large amounts of data to predict or when you want to keep prediction results up-to-date as part of your planning and forecasting cycle.</p> <p>For additional information about Auto Predict job parameters, see Running Auto Predict Predictions.</p> <p>For information about creating Auto Predict prediction definitions, see About Auto Predict.</p>
Insights	<p>Runs an IPM Insights insight definition.</p> <p>For information about configuring IPM Insights insight definitions, see Configuring IPM Insights.</p>
Integration Pipeline*	<p>Runs a Pipeline definition.</p> <p>This job supports running a Pipeline based on the parameters and variables that were defined for the Pipeline in the Data Integration user interface; for example, Start Period and Import Mode.</p> <p>For descriptions of the job parameters and variables, see the following topics:</p> <ul style="list-style-type: none"> Using an Integration Job Type in <i>Administering Data Integration for Oracle Enterprise Performance Management Cloud</i> Running a Pipeline in <i>REST API for Enterprise Performance Management Cloud</i> <p>For information about creating a Pipeline definition, see Using the Pipeline in <i>Administering Data Integration for Oracle Enterprise Performance Management Cloud</i>.</p>

*This job is prevented from starting during daily maintenance, whether it's a scheduled job or a job that is started on an ad hoc (unscheduled) basis. Oracle recommends that you start this job outside of the daily maintenance window. See [Setting the Daily Maintenance Process Start Time](#).

Scheduling Jobs to Run Later

Table 20-2 Scheduling Jobs Options

Option	Description
Schedule starting from	Select the starting date and time, including the time zone.

Table 20-2 (Cont.) Scheduling Jobs Options

Option	Description
Name	Specify a name for the scheduled job; for example, MyDailyCubeRefresh . The name you specify is displayed along with the job name (which you'll choose on the next screen); for example, MyDailyCubeRefresh : Refresh Database .
Recurrence Pattern	<p>Specify the frequency with which to run the job:</p> <ul style="list-style-type: none"> Hourly: Hourly jobs run according to a timetable which is based on the values you set in the Schedule starting from and Hour fields. The schedule for Hourly jobs restarts each day during the midnight hour and the recurring job starts at the first hour, second hour, third hour (and so on up to 12 hours) after the midnight hour, depending on the value you select in the Hour field. <p>So for example, if you specify a value of 5 in the Hour field, the possible times the job could start are during the 12:00 AM hour, the 5:00 AM hour, the 10:00 AM hour, the 3:00 PM hour, and the 8:00 PM hour each day. If the scheduled start time for a job is 12:48 PM and you set the Hourly recurrence for 5 Hours, the job will start at 3:48 PM, which is the first scheduled time available after 12:48 PM in which to start a 5-hour recurring job. Then the job will run again at 8:48 PM, 12:48 AM, 5:48 AM, and 10:48 AM.</p> <p>For the default recurrence of 1 Hour, the job will start running at the start time you specify and continue to run each hour until the ending date and time; for example, if the scheduled start time for a job is 12:48, the job will run at 12:48, 1:48, 2:48, 3:48 and so on.</p> <p>For a schedule of times based on the values selected in the Hour field, see Scheduling Hourly Jobs.</p> By Minute: Set the Frequency for 15 or 30 minutes. The job will start running in 15 or 30 minutes and continue to run at the selected frequency until the ending date and time; for example, if you set the job to run every 15 minutes and the starting time is 3:15, the job will start to run at 3:30, then 3:45, and so on. Jobs cannot be scheduled to run in increments smaller than 15 minutes. Run Once: The job will run once at the starting date and time. Yearly: The job will run at the starting date and time and continue to run each year thereafter until the end date. Monthly: The job will run at the starting date and time and continue to run each month thereafter until the end date. Weekly: The job will run at the starting date and time and continue to run each week until the end date. Daily: The job will run at the starting date and time and continue to run each day until the end date.
End Date	If the job is recurring, select an ending date and time.

Scheduling Hourly Jobs

Hourly jobs run according to a timetable which is based on the values you set in the **Schedule starting from** and **Hour** fields. The schedule for **Hourly** jobs restarts each day during the midnight hour and the recurring job starts at the first hour, second hour, third hour (and so on up to 12 hours) after the midnight hour, depending on the value you select in the **Hour** field.

When do you want to run this job?

Run Now

Schedule starting from

11/18/19 12:48 PM

(UTC-05:00) New York - Eastern Time

How often do you want to run this job?

Name Hourly Rules

Recurrence pattern Hourly

Hour 5 hour

End Date 11/19/19 12:48 PM

For example, if you specify a value of **5** in the **Hour** field, the hours during which the job will run each day are 12 AM, 5 AM, 10 AM, 3 PM, and 8 PM. The start time indicates the hour and minute when the system should start honoring the schedule, and the end time indicates when the system should stop. So if the start time is 12:48 PM on 11/18, then that means 12:48 AM, 5:48 AM, and 10:48 AM have already occurred on the current day (11/18) and the next available timeslot is 3:48 PM, which is when the scheduled job will run for the first time. After that it will run at 8:48 PM on 11/18. However on 11/19 it starts over again and will run at 12:48 AM, 5:48 AM, 10:48 AM, and so on until the system reaches the specified end time (in this case, 12:48 PM on 11/19).



Note:

When a job spans two days, the job runs during the midnight hour the next day and re-sets the recurrence pattern.

To schedule hourly jobs, see [Scheduling Jobs](#).

Table 20-3 Timetable for Hourly Jobs

Hourly Recurrence	Timetable
1 (default)	AM: 12:00, 1:00, 2:00, 3:00, 4:00, 5:00, 6:00, 7:00, 8:00, 9:00, 10:00, 11:00 PM: 12:00, 1:00, 2:00, 3:00, 4:00, 5:00, 6:00, 7:00, 8:00, 9:00, 10:00, 11:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 1 hour, the job will run for the first time at 12:48 PM, and then again at 1:48 PM, 2:48 PM, 3:48 PM, and so on.
2	AM: 12:00, 2:00, 4:00, 6:00, 8:00, 10:00 PM: 12:00, 2:00, 4:00, 6:00, 8:00, 10:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 2 hours, the job will run for the first time at 12:48 PM, and then again at 2:48 PM, 4:48 PM, 6:48 PM, and so on.

Table 20-3 (Cont.) Timetable for Hourly Jobs

Hourly Recurrence	Timetable
3	<p>AM: 12:00, 3:00, 6:00, 9:00 PM: 12:00, 3:00, 6:00, 9:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 3 hours, the job will run for the first time at 12:48 PM, and then again at 3:48 PM, 6:48 PM, 9:48 PM, 12:48 AM, 3:48 AM, and so on.</p>
4	<p>AM: 12:00, 4:00, 8:00 PM: 12:00, 4:00, 8:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 4 hours, the job will run for the first time at 12:48 PM, and then again at 4:48 PM, 8:48 PM, 12:48 AM, 4:48 AM, and so on.</p>
5	<p>AM: 12:00, 5:00, 10:00 PM: 3:00, 8:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 5 hours, the job will run for the first time at 3:48 PM, and then again at 8:48 PM, 12:48 AM, 5:48 AM, 10:48 AM, and so on.</p>
6	<p>AM: 12:00, 6:00 PM: 12:00, 6:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 6 hours, the job will run for the first time at 12:48 PM, and then again at 6:48 PM, 12:48 AM, 6:48 AM, and so on.</p>
7	<p>AM: 12:00, 7:00 PM: 2:00, 9:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 7 hours, the job will run for the first time at 2:48 PM, and then again at 9:48 PM, 12:48 AM, 7:48 AM, and so on.</p>
8	<p>AM: 12:00, 8:00 PM: 4:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 8 hours, the job will run for the first time at 4:48 PM, and then again at 12:48 AM, 8:48 AM, and so on.</p>
9	<p>AM: 12:00, 9:00 PM: 6:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 9 hours, the job will run for the first time at 6:48 PM, and then again at 12:48 AM, 9:48 AM, 6:48 PM, and so on.</p>
10	<p>AM: 12:00, 10:00 PM: 8:00</p> <p>For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 10 hours, the job will run for the first time at 8:48 PM, and then again at 12:48 AM, 10:48 AM, 8:48 PM, and so on.</p>

Table 20-3 (Cont.) Timetable for Hourly Jobs

Hourly Recurrence	Timetable
11	AM: 12:00, 11:00 PM: 10:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 11 hours, the job will run for the first time at 10:48 PM, and then again at 12:48 AM, 11:48 AM, 10:48 PM, and so on.
12	AM: 12:00 PM: 12:00 For example, if the scheduled start time is 12:48 PM and you set the hourly recurrence for 12 hours, the job will run for the first time at 12:48 PM, and then again at 12:48 AM, and so on.

Editing and Canceling Jobs

You can edit the schedule for pending jobs, and delete pending and complete jobs. You can't modify or delete jobs that are processing.

To edit or delete jobs:

1. Click **Application**, and then click **Jobs**.
2. To change when a job runs, click **•••**, then **Edit** and modify the schedule.

Note:

When changing the frequency of a job, the job will not run at the new frequency until the next time it runs at the previous frequency; for example, if the job is set up to recur daily and you change the frequency to hourly, the job won't start running at the new hourly frequency until after the scheduled daily job runs the next day. If you want the job to begin running at the new frequency sooner, Oracle recommends that you delete the scheduled job and create a new one.

3. To delete jobs, select them, click **•••**, and then **Delete**.

Duplicating Jobs

Use the **Save As** option to create a duplicate of an existing job, and then update it to avoid starting over making selections each time you create a new job.

Save As is supported for the following job types:

- Export Data
- Import Data
- Export Metadata
- Import Metadata
- Refresh Database

- Clear Cube
- Import Exchange Rates



Note:

For descriptions of the job types, see [Job Types](#).



To duplicate a job:

1. Click **Application**, and then click **Overview**.
2. Click **Actions**, and then select one of the following actions:
 - **Export Data**
 - **Import Data**
 - **Export Metadata**
 - **Import Metadata**
 - **Refresh Database**
 - **Clear Cube**
 - **Import Exchange Rates**
3. On the listing page, click **•••** in the **Actions** column next to the job that you want to duplicate, and then select **Save As**.
4. Enter a name for the new job, and then click **OK**.

After the duplicate job is created, you can then open the job and update it. The error file for the duplicate job will automatically use the new job name as a prefix.

Canceling Rules Jobs and Ruleset Jobs

You can cancel ruleset or rule jobs that are processing and display in **Recent Activity**. To cancel these jobs, click **Application**, then click **Jobs**.

To cancel a rules job, click  beside the job, then , and then **Cancel**.

To cancel a ruleset, click , then  on **Job Details**, and then **Cancel**.

Downloading Export Files From Your Outbox

After running a metadata or data export job, you can download the export file from the Outbox.

To download files:

1. Click **Application**, and then click **Jobs**.
2. Under **Recent Activity**, click the job.
3. At the top of **Job Details**, click the export file option to select a download location.


Viewing Task Manager Jobs

The Task Manager Jobs page lists Task Manager jobs and lets you filter and view job details. For Task Manager jobs, you can:

- View job details such as parameters, properties, and results.
- View job summary statistics on the side panel.

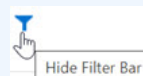
Task Manager jobs include additional execution sequencing routines to prevent conflicting batch jobs from running at the same time, ensuring application integrity. While the run time of individual job aren't affected, their start times may be delayed due to the optimization sequencing.

To view the Jobs:


1. On the Home page, click **Tasks**, and then click the **Jobs** tab in the left navigation.
2. **Optional:** To search for a job, enter search criteria in the **Search** text box.
3. **Optional:** In the Filter bar, select filter criteria:
 - **Job ID**
 - **Name**
 - **Type**
 - **Source**
 - **Status:** Pending, Running, Complete, and Error
 - **Start Date**
 - **End Date**
4. Click  **Add a Filter** to select additional filter criteria.

Note:

To hide the filter bar, click



. To clear all filters, click to the right of the filter bar.

5. Click  icon next to a job to view the **Job Details** such as **Parameters**, **Properties**, and **Results**.
 - Not all sections will be available for all jobs.
 - If the job is pending because it is waiting for other job(s) to complete, these will be listed under **Properties**. The start time of the currently running job is in parenthesis.
 - If the batch job was started manually (example, running a report), **Scheduled Start Date** shows the user initiated time. If it is a scheduled job (example, system maintenance), **Scheduled Start Date** shows the time it's schedule to run.

6. A new panel on the right-side contains the summary information for jobs. At the top of the summary panel, you can select the range of the tasks to be included in the summary:
- Last 24 hours
 - Last 7 days
 - Last 30 days Last 60 days (maximum time job information is stored before it's purged)

The following information is displayed in the side panel for each **Job Name** for the specified **Time Range**:

- **Total Time:** Total time of all executions of the job
- **Average Time:** Average time across all job runs
- **Execution:** Total number of executions

 **Note:**

If a job is highlighted in the main list, the job's name will be highlighted automatically in the Summary panel.

Task Manager Jobs

Job Name	Description	Execution
Email Notifications	Generate email notifications for upcoming user actions.	Scheduled
Generate Reports	Generate report output from report definitions.	On Demand
Import Reports	Import custom report definitions.	On Demand
LCM Export	Export object definitions and data.	Scheduled On Demand
LCM Import	Import object definitions and data.	On Demand
Schedule Monitor	Set pending tasks to open when their start time is reached.	Scheduled
System Maintenance	Daily cleanup and optimization.	Scheduled
Task Status Update	Update event monitoring tasks.	Scheduled
Delete Schedule	Delete the specified schedule including all the tasks and their related information such as attachments.	On Demand
Deploy Schedule	Deploy tasks from one or more templates to a specified schedule.	On Demand
Import Integrations	Import external integration types and related data.	On Demand
Import Tasks	Import tasks and related data into specified template or schedule.	On Demand

21

Auditing Tasks and Data

Understand how to audit tasks performed by users and how to view audit details.

Related Topics

- [Auditing Overview](#)
- [Enabling Audit Tracking](#)
- [Viewing Audit Details](#)

Auditing Overview

Use the Audit feature to view tasks performed by users. You can filter audited tasks by audit type (for example, Data, Approvals, or Clear Cell Details), date range (for example, Yesterday or Last 60 Days), and user name.

You must be a Service Administrator to enable audit tracking, and to view and export audit information.

These are the types of user activities the system can log in the task audit:

Table 21-1 Tasks That Can be Audited

Audit Types	Tracked Changes
Dimension Administration	<ul style="list-style-type: none">• Dimension hierarchy: Adding a member or dimension; moving, deleting, and changing properties; renaming a member and dimension• Performance settings: Resetting a dimension's dense or sparse setting, changing the order of dimensions• Currencies: Adding or deleting currencies, setting a triangulation or reporting currency
Alias Table Administration	Changes to alias tables: Creating, copying, renaming, deleting, and clearing
Data	<ul style="list-style-type: none">• Cell values• Supporting detail• Account annotations• Cell-level documents

Note:

The audit log only captures modifications if the data change occurs within a data form. If a modification occurs as part of, for example, a business rule calculation, a data map, or a direct data load to Oracle Essbase, it will not be captured in the audit log.

Table 21-1 (Cont.) Tasks That Can be Audited

Audit Types	Tracked Changes
Launch Business Rules	Updates from calculation scripts and business rules (including runtime prompts)
Form Definition	Forms: Creating, moving, deleting forms (The audit record doesn't record how the design changed.)
Form Folder Administration	Folders: Created, moved, and deleted
Approvals	Approvals: Approval unit owners and status
Copy Version	Versions copied, including supporting detail, cell text, cell attachments, and data without any details. The audit record doesn't record details (such as data and supporting detail) of the copied version.
Security	Access permissions to dimension members, forms, form folders, business rules, and task lists
Users Administration	Users added, changed, and deleted
Groups Administration	Groups added, changed, and deleted; users added and removed
Tasklist	Task lists: created, updated, saved, moved, and deleted
Copy Data	Users' selections for Static Dimensions, Source Dimension, and Destination Dimension, including supporting detail, cell text, cell attachments, and data without any details
Clear Cell Details	Users' selections for clearing supporting details, comments, and attachments
Variables	Variables (substitution variables and user variables): Added, changed, and deleted

The Audit page displays the following information:

- Audit (task)
- Source
- Action
- User
- Name
- Date
- Details
- Property
- Old Value
- New Value

All columns can be sorted in ascending or descending order.

Enabling Audit Tracking

Audit tracking isn't enabled by default. Service Administrators must enable auditing so data changes can be tracked.

To enable auditing:

1. On the Home page, click **Tools**, and then click **Audit**.

2. From the **Audit** page, click **Enable Auditing**.
3. From the **Enable Auditing** page, select an audit task or tasks, and then click **Save and Close**.


Viewing Audit Details

You can view and export up to 180 days of audit details in the business process interface.

To view audit details:


1. On the Home page, click **Tools**, and then click **Audit**.

If auditing is enabled, by default the **Audit** page displays the audit records for **Data** tasks for the **Last 7 Days**. To enable auditing, see [Enabling Audit Tracking](#).

2. To filter, click , and select filter criteria:
 - **Audit Types:** Select one or more, or **All**. For a list of audit types and descriptions, see [Auditing Overview](#).
 - **Date Range:** Select **Today**, **Yesterday**, **Last 7 Days**, **Last 30 Days**, **Last 60 Days**, or **Last 180 Days**.

Note:

- You can't select a date range prior to 180 days from today. The date range you select must occur between today and 180 days prior to today (including today).
- The business process retains up to 365 days of audit details from the current system date. To export more than 180 days of audit details, you can use the EPM Automate `exportAppAudit` command or the REST API Export Audit job. See *Working with EPM Automate for Oracle Enterprise Performance Management Cloud* or *REST API for Oracle Enterprise Performance Management Cloud*.

- **User Name:** Enter a user name or click  to search for the user.
3. When you're done selecting filter criteria, click **Apply**.

The grid displays the first 200 records from the audit table that match the filter criteria. You can view a legend at the bottom of the table if the filter criteria has more than 200 records in it.
 4. To export the audit information to a Microsoft Excel spreadsheet, click **Export**, and follow the download instructions.

When you select the **Export** option, the system exports all of the records matching the filter criteria to an `xlsx` file (format for Microsoft Excel versions 2007 and later).



Note:

If data auditing is enabled, users can see what data has changed by selecting **Actions**, and then **Change History**.

Managing Data Validation

Learn how to build data validation rules that are checked when conditions are met in forms. This chapter includes helpful scenarios that give examples of how data validation can help implement business policies.

Related Topics

- [Creating and Updating Data Validation Rules](#)
- [Formatting Cells and Setting the Promotional Path](#)
- [Viewing Data Validation Rules](#)
- [Order of Evaluation and Execution for Data Validation Rules](#)
- [Conditions Supported by the Rule Builder](#)
- [Data Validation Conditional Operators](#)
- [Data Validation Rule Scenarios](#)

Creating and Updating Data Validation Rules


To implement business policies and practices, you can build data validation rules that are checked when conditions are met in forms. Validation messages can be generated if entered data violates validation rules. You can also build limits on submitted approval unit data using validation rules, and designate a reviewer, owner, or notifier to review data that meets some condition.

For example, data validation can ensure that a department's capital expenses adhere to company policies by preventing users from submitting budgets that contain capital expenditures that fall outside the company's guidelines. Sample scenarios that can be addressed using data validation rules are described in [Data Validation Rule Scenarios](#).

Defining data validation rules involves these main tasks:








- Identifying the data cells or location that you want to display with validation messages or in different colors when conditions are met.
- Identifying the cells that need to participate during rule evaluation, and defining the rule accordingly.
- Creating the data validation rule at the location identified, as described in this topic.





To create and update validation rules:

1. On the Home page, click **Navigator** , and then under **Create and Manage**, click **Forms**.
2. Create or edit a form, and then on the **Form and Ad Hoc Grid Management** page, click **Layout**.
3. In **Layout**, right-click the grid, row heading, column heading, or cell for which you want to add or update the validation rule.

 **Note:**

When you hover the cursor over cells in **Layout**, a context menu displays whether the cell contains a validation rule. To view the validation message, select **Show Data Validation Messages**. The context menu also displays when a single cell is selected.

4. Select **Add/Edit Validation Rules** to create or update rules.
5. To add a rule, click  and enter a name and description for the rule.
If necessary, move the rule by selecting an option from **Location**. To create a rule similar to an existing rule, click  and then update the rule. To view rules, click **View Rule**. See [Viewing Data Validation Rules](#).
6. Update the rule.
 - a. For **Condition**, select an option to begin the condition statement: **If**, **Else If**, **Else**, **Then**, **Check Range**, or **Range**.
The first part of a rule must include an If condition. Rules must also contain some form of Then condition. See [Conditions Supported by the Rule Builder](#).
 - b. For **Source Type**, select an option for evaluation by the rule.
The **Source Type** list displays the appropriate options for the Condition. For example, If conditions can include **Current Cell Value**, **Cell Value**, **Column Value**, **Row Value**, **Member Name**, **Member**, **Cross-Dim Member**, **Account Type**, **Version Type**, **Var Reporting Type**, **UDA**, or **Attribute**. For detailed information about each type of condition, see [Conditions Supported by the Rule Builder](#).
 - c. If applicable for the selected **Source Type**, enter a value in **Source Value** by selecting an option or entering a free form value.
 - d. Select an operator for the evaluation: **=**, **!<**, **<**, **<=**, **>**, **>=**, **Equals**, **Not Equals**, **Contains**, **Starts With**, or **Ends With, In, or Not In**.
For examples, see [Data Validation Conditional Operators](#).
 - e. Select an option for the appropriate **Target Type** for the rule.
 - f. Update conditions by clicking an icon in the **Actions** column to the right of the condition builder:
 -  : Add a condition next to the current row.
 -  : Delete a condition at the current row.
 - g. Select conditions or condition blocks to update.
To update condition blocks, click an icon in the **Condition** area, at the top of the condition builder:
 -  : Add a condition block within the validation rule starting with If. You can expand or collapse the condition. See [Conditions Supported by the Rule Builder](#).
 -  : Delete the selected condition block.
 -  : Delete selected conditions, and copy them to paste in a new location.

- : Copy selected conditions.
- : Paste selected conditions to a new location.
- : Group the selection within a condition, and add a grouping parenthesis. In addition to groupings that you set, the If statement in the grouping block is grouped when a condition is grouped, and the **Custom Grouping** option is enabled.
- : Ungroup the selected conditions. The grouping parentheses are removed from the selected condition. One grouping is removed from the condition each time Ungroup is selected.

You can also set your own grouping for conditions by selecting **Custom Grouping**, then setting up the grouping in the rule definition area.

Selected conditions are displayed as shaded. To clear selected conditions, click once more to the left of the **Condition** column.

7. Click  in the rightmost column to add processing instructions.

 **Note:**

If the icon isn't displayed, ensure that the rule is valid and that it permits cell processing instructions. For example, cell processing instructions are included for Else, Range, and Then conditions. The icon isn't displayed until all required columns are selected for a rule.

See [Formatting Cells and Setting the Promotional Path](#).

8. When you're ready to enable the rule to make it available in the form, select **Enable Validation Rule**.

 **Tip:**

While you're building a rule, you can save the rule without enabling it. After any errors are resolved and the rule is ready to be validated and used, you can enable and save the rule to make it available in the form. You can temporarily disable a rule by clearing **Enable Validation Rule**.

9. When you finish updating the rule, validate the rule:
 - a. Click **Validate**.

The validation status displays at the top of the dialog box. You must correct errors before you save changes. If you close the dialog box without validating rules and fixing errors noted during validation, updates are not saved.
 - b. After fixing any errors noted during validation, ensure that **Enable Validation Rule** is selected above the rule definition area to enable the rule for the application.
 - c. After the rule is validated, click **OK**.
10. **Optional:** In the **Form and Ad Hoc Grid Management** page, view and update rules:




- In the **Validation Rules** pane on the right side of the **Form and Ad Hoc Grid Management** page, add, edit, or delete rules by clicking , , or .
- If multiple rules are defined at the same location, you can change the order in which rules are processed when rules have the same precedence. To move a rule up, down, or to the top or bottom of the list, select the rule and click the arrows. See [Order of Evaluation and Execution for Data Validation Rules](#).
- Select form validation rules options:

Table 22-1 Form Validation Rules Options

Option	Description
Validate only for users with access to this form	If the currently logged-in user does not have access to the form, do not execute validations associated with the form when validating the Approval unit.
Validate only for pages with existing blocks	When enabled, the system figures out which page combinations have potential blocks and runs the validations only for those page combinations. There are a few exceptions to this. If a page combination has any Dynamic Calc, Dynamic Calc and Store, Label only, or Store with one child member, then that page is always loaded.
Validate only for cells and pages the user has access to	When enabled, validations are run as the currently logged-in user and not as the Service Administrator, which means the user's security will be applied to the form members.

11. In the **Form and Ad Hoc Grid Management** page, preview and validate the form, resolve any validation errors, and then save changes.

For forms that have data validation rules enabled, rules are validated when the form is loaded or saved. Data validation rules are saved when the form is saved. See [Creating Forms](#).

When users open the form, they can view and resolve validation messages using the **Data Validation Messages** pane.

See Resolving Data Validation Errors in *Working with Planning*.

Formatting Cells and Setting the Promotional Path

After a rule is set up, use the Process Cell dialog box to set how cells display in forms, and update the promotional path based on data validations.

To format cells and set the promotional path:



1. In the Data Validation Rule Builder dialog box, click  in the right-most column.

Note:

If the icon isn't displayed, ensure that the rule is valid and that it permits cell processing instructions. For example, cell processing instructions are included for Else, Range, and Then conditions. The icon isn't displayed until all required columns are selected for a rule. See [Creating and Updating Data Validation Rules](#).

2. In the Process Cell dialog box, set how the cell should appear in forms if the conditions defined by this rule are fulfilled.

When the rule is enabled, it doesn't validate unless you specify at least one of these options: a cell background color or a validation message or a promotional path option.

- To add or update the cell background color, click . To remove the cell background color, click .
- To display a validation message for the cell, enter the message in the **Validation Message** field. Users see this text when they select **Show Data Validation Messages** in the context menu that appears when you hover over the cell in the form. It also appears as a link in the **Data Validation Messages** pane if data cells are flagged by the validation rules and the **Display message in the Data Validation Messages pane** check box is selected. For information on viewing and resolving data validation errors, see *Working with Planning*.
- To update the approval unit promotional path based on the data validation rule specified for the cell, select an Approvals option.

You can leave the option as **None** to specify no changes to the promotional path, if the data cell is in a technically valid state and you're only updating the cell background color or specifying a validation message. You can also select **Update Promotional Path** or **Do Not Promote** (to prevent the approval unit from being promoted if the condition is fulfilled). See [Modifying the Approval Unit Promotional Path](#).

3. Click **OK**.

Updates for the rule are displayed in the Process column for the rule. If you specified a cell color, that color is displayed. You can preview a validation message by hovering the cursor over the Process column.

Viewing Data Validation Rules

After data validation rules are set up with processing instructions, you can use the View Rule dialog box to view all rules that apply to the selected grid, row, column, or cell.

To view data validation rules:

1. In the **Data Validation Rule Builder** dialog box, click **View Rule** to view all the rules at this level (grid, row, column, cell) for this location in the form.
2. Select the rule name, and then double-click the rule or click **OK** to view details.

Order of Evaluation and Execution for Data Validation Rules

For data validation rules in forms, the precedence for rule evaluation depends on condition priority, location of the rule, and position of the rule in the rule list (if multiple rules exist in the same location). First, cell-level rules are processed. Next, rules at the column level are processed, and then row-level rules are processed. Finally, rules at the grid level are processed. The rules are evaluated based on their position in the rule list within each level.

Location and position determine the order in which the rule will be processed. However, the priority of the processing instructions determines which rule is applied to the data cell. So, if a cell-level rule contains processing instructions with priority 4 and a grid-level rule contains processing instructions with priority 5, the grid-level rule is applied to the data cell. If all rules have processing instructions with the same priority, the first processed rule wins. The priority is

based on whether the cell processing instructions specify a validation message, a color, the **Do Not Promote** promotional path option, or a combination of these settings.

Table 22-2 Priority for Rules in Forms

Default Condition Priority	Validation Message	Color	Do Not Promote
1 (lowest)	X		
1		X	
1	X	X	
2			X
3	X		X
4		X	X
5 (highest)	X	X	X

Conditions Supported by the Rule Builder

These conditions are supported by the data validation rule builder: If, Else, Else If, Then, Check Range, and Range.

For details and examples of the values supported by these conditions, see these sections:

- **If, Else, Else If:** [If Condition Values](#)
- **Then:** [Then Condition Values](#)
- **Check Range, Range:** [Range Condition Values](#)

If Condition Values

For information on other conditions, see [Conditions Supported by the Rule Builder](#).

Current Cell Value

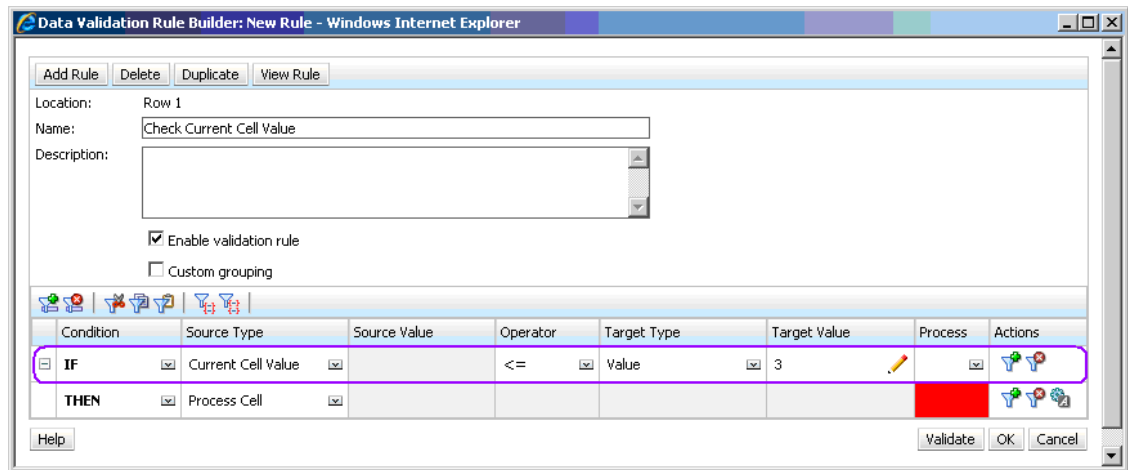
Action:

The action is performed when the value in the current data cell on which the rule is invoked satisfies this condition.

Operators:

The operators available for this function: =, !=, <, <=, >, >=, Equals, Not Equals, Contains, Starts With, or Ends With. These operators act on the selected target value, which can be a free form value, cell value, column value, row value, or cross-dimension member.

Condition Definition:



Condition Evaluation:

With the condition shown in the previous figure, the cells in Row 1 with member Row_Member1 will turn red when the condition is evaluated.

		A	
		Column_Member 1	Column_Member 2
1	Row_Member 1	1.0	2.0
	Row_Member 2	5.0	6.0
	Row_Member 3	9.0	10.0
2	Row_Member 4	13.0	14.0
	Row_Member 5	17.0	18.0

Cell Value

Action:

The action is performed when the value for the specified cell satisfies the condition.

Operators:

The operators available for this function: =, !=, <, <=, >, >=, Equals, Not Equals, Contains, Starts With, Ends With. These operators act on the target value selected, which can be a free form value, cell value, column value, row value, or cross-dimension member.

Condition Definition:

IF	Cell Value	A,1	=	Value	33		
----	------------	-----	---	-------	----	--	--

Condition Evaluation:

A design-time cell can expand to one or more data cells at data entry time, as shown in the following figure. The value for the cell is the sum of values in all the expanded data cells. For

example, the value for cell A1 is the sum of the values in the cells outlined in purple ($1+2+5+6+9+10=33$), and the value for cell A2 is the sum of the values in the cells outlined in blue ($13+14+17+18=62$).

		A	
		Column_Member 1	Column_Member 2
1	Row_Member 1	1.0	2.0
	Row_Member 2	5.0	6.0
	Row_Member 3	9.0	10.0
2	Row_Member 4	13.0	14.0
	Row_Member 5	17.0	18.0

Column Value

Action:

The action is performed when the value for the specified column satisfies the condition.

Operators:

The operators available for this function: =, !=, <, <=, >, >=, Equals, Not Equals, Contains, Starts With, or Ends With. These operators act on the target value selected, which can be a free form value, cell value, column value, row value or cross dim member.

Condition Definition:

IF	Column Value	A	<	Value	3		
----	--------------	---	---	-------	---	--	--

Condition Evaluation:

A design-time column can expand to data cells at data entry, as shown in the following figure. The value for a column is the sum of the values in all the expanded data cells in that column at the current row location. The current row changes as the current cell for which the rule is being evaluated changes within the grid.

For example, the value for column A is the sum of the values in the cells outlined in purple ($1+2=3$), when the rule is evaluated for any cell in row 1 with member Row_Member1. The value for column A is the sum of values in cells outlined in blue ($9+10=19$) when the rule is evaluated for any cell in row 1 with member Row_Member3. Similarly, the value for column A is the sum of values in cells outlined in green ($17+18=35$) when the rule is evaluated for any cell in row 2 with member Row_Member5, and so on.

		A	
		Column_Member 1	Column_Member 2
1	Row_Member 1	1.0	2.0
	Row_Member 2	5.0	6.0
	Row_Member 3	9.0	10.0
2	Row_Member 4	13.0	14.0
	Row_Member 5	17.0	18.0

Row Value

Action:

The action is performed when the value for the specified row satisfies the condition.

Operators:

The operators available for this function: =, !=, <, <=, >, >=, Equals, Not Equals, Contains, Starts With, Ends With. These operators act on the target value selected, which can be a free form value, cell value, column value, row value, or cross-dimension member.

Condition Definition:

IF	Row Value	1	!=	Value	10		
----	-----------	---	----	-------	----	--	--

Condition Evaluation:

A design-time row can expand to one or more data cells at data entry time, as shown in the following figure. The value for a row is the sum of the values in all of the expanded data cells in that row at the current column location. The current column changes as the current cell for which the rule is being evaluated changes within the grid.

For example, the value for row 1 is the sum of the values in the cells outlined in purple (1+5+9=15), when the rule is evaluated for any cell in column A with member Column_Member1. Similarly, the value for row 2 is the sum of values in cells outlined in blue (14+18=32) when the rule is evaluated for any cell in column A with member Column_Member2, and so on.

		A	
		Column_Member 1	Column_Member 2
1	Row_Member 1	1.0	2.0
	Row_Member 2	5.0	6.0
	Row_Member 3	9.0	10.0
2	Row_Member 4	13.0	14.0
	Row_Member 5	17.0	18.0

Cross-Dim Member

Action:

The action is performed when the value in the data cell referenced by the cross-dimension member satisfies the condition. The current data cell members are used to fully qualify the cell for dimensions whose members are not specified in the cross-dimension. This member name is a free form entry.

Note:

If a form validation rule uses the cross-dim operator, the cross-dimension cell must be represented on the form. The column or row containing the cross-dimension cell might be hidden on the form if the user does not want to see it there.

Operators:

The operators available for this function: =, !=, <, <=, >, >=, Equals, Not Equals, Contains, Starts With, or Ends With. These operators act on the target value selected. The target value can be a free form value, cell value, column value, row value or cross-dimensional member. It can include one member only from each dimension, and must include only members for dimensions on rows or columns.

Condition Definition:

IF	Current Cell Value	>	Cross-Dim Member	Row_Member 5	
----	--------------------	---	------------------	--------------	--

Condition Evaluation:

When the previous rule is applied at grid level, the rule is invoked on each cell in the form, and the value in that cell is compared with the value in the cell outlined in purple. Thus, the cell at Row_Member 5->Column_Member 2 will turn red.

		A	
		Column_Member 1	Column_Member 2
1	Row_Member 1	1.0	2.0
	Row_Member 2	5.0	6.0
	Row_Member 3	9.0	10.0
2	Row_Member 4	13.0	14.0
	Row_Member 5	17.0	18.0

Member Name

Action:

The action is performed if the current data cell on which the rule is invoked has the specified dimension member in its intersection. The member name for the selected dimension should be in the cube for which the form is created.

Operators:

The operators can be Equals, Not Equals, Contains, Starts With, or Ends With. The target value, which is the member name, is selected or entered free form.

Condition Definition:

<input type="checkbox"/> IF	<input type="checkbox"/> Member Name	<input type="checkbox"/> Account	<input type="checkbox"/> Equals	<input type="checkbox"/> Value	<input type="checkbox"/> Total Cost		<input type="checkbox"/>		
-----------------------------	--------------------------------------	----------------------------------	---------------------------------	--------------------------------	-------------------------------------	--	--------------------------	--	--

Member

Action:


The action is performed if the current data cell on which the rule is invoked has the specified dimension member (or any one of the members that result from evaluating the specified function) in its intersection.

Operator:

The available operators are In and Not In. The target value, which is the member, is selected or entered free form.

Including Attributes

Rules can include attribute values. If Source Type is **Attribute**, the available operator is Is, and you can type an attribute value directly in the Target Value field. If Source Type is **Member**, and you select the In or Not In operator in the Target Value field, you can select an attribute by

clicking , and then clicking **Variables** in the Member Selection dialog box. You can use the member selection function selector to select functions for the attribute, such as NotEqual and GreaterOrEqual.

When using attribute values in data validation rules, keep in mind the way attributes are evaluated. If a rule references one or more attributes from one or more dimensions, they are evaluated as an OR for attribute values from the same attribute dimension, and as an AND for attributes from different attribute dimensions. For example, if the rule includes attributes IN Red, Blue, True, Big, then all members are selected that are either (Red OR Blue) AND True AND Big. For additional information, see [Selecting Attribute Values as Members](#).

Condition Definition for Member Source Type

<input type="checkbox"/> IF	<input type="checkbox"/> Member	<input type="checkbox"/> Account	<input type="checkbox"/> In	<input type="checkbox"/> Value	<input type="checkbox"/> IDescendants("Total Cost")		<input type="checkbox"/>		
-----------------------------	---------------------------------	----------------------------------	-----------------------------	--------------------------------	---	--	--------------------------	--	--

Condition Definition for Attribute Source Type

IF	Attribute	Entity	Is	Value	red			
----	-----------	--------	----	-------	-----	--	--	--

Account Type

Action:

The action is performed if the current data cell on which the rule is invoked has an account with the specified account type in its intersection. Refers to all the currently supported Account Types: Expense, Revenue, Asset, Liability, Equity, and Saved Assumption.

Operator:

The available operator is Is.

Condition Definition:

IF	Account Type		Is		Expense			
----	--------------	--	----	--	---------	--	--	--

Version Type

Action:

The action is performed if the current cell on which the rule is invoked has a version with the specified version type in its intersection. It refers to the version types currently supported, standard bottom-up and standard top down.

Operator:

The available operator is Is.

Condition Definition:

IF	Version Type		Is		Standard Botto...			
----	--------------	--	----	--	-------------------	--	--	--

Variance Reporting Type

Action:

The action is performed if the current cell on which the rule is invoked has an account with the specified variance reporting type in its intersection. Refers to the available variance reporting types, Expense and Non-Expense.

Operator:

The available operator is Is.

Condition Definition:

IF	Var Reporting Type		Is		Non-Expense			
----	--------------------	--	----	--	-------------	--	--	--

UDA

Action:

The action is performed if the current cell on which the rule is invoked has this UDA associated with the specified dimension's member in its intersection. The UDA reference is selected based on the selected dimension. The condition is based on the UDA for this dimension being equal to the selected value. You must select the UDA value from the drop-down list.

Operator:

The available operator is Is.

Condition Definition:

IF	UDA	Scenario	Is	Value	ACTUAL			
----	-----	----------	----	-------	--------	--	--	--

Attribute

Action:

The action is performed if the current cell on which the rule is invoked has this attribute associated with the specified dimension's member in its intersection. The attribute reference is selected based on the selected dimension. The condition is based on the attribute for this dimension being the selected target value.

Operator:

The available operator is Is.

Condition Definition:

IF	Attribute	Entity	Is	Value	East			
----	-----------	--------	----	-------	------	--	--	--

Then Condition Values

Action:

The Then conditions supported by the data validation rule builder support Process Cell conditions only. To enter Process Cell Conditions, see [Formatting Cells and Setting the Promotional Path](#).

Condition Definition:

THEN	Process Cell							
------	--------------	--	--	--	--	--	--	--

For information on other conditions, see [Conditions Supported by the Rule Builder](#).

Range Condition Values

The Check Range and Range conditions are used together. These conditions can be used in the data validation rule builder in a Then clause or standalone.

For information on other conditions, see [Conditions Supported by the Rule Builder](#).

Check Range

Action:

Defines the value that needs to be in a specific range.

Value:

This value can be the Current Cell Value or the value in a particular Row, Column or Cell.

Range

Action:

Defines a valid range for the value defined in the Check Range condition. This range includes all values that are \geq the minimum value and $<$ the maximum value. If the value specified in the Check Range condition is within this range, then the processing instructions defined by this condition are applied to the data cell on which the rule is being invoked. You can define multiple ranges of values and provide different processing instructions for each range.

Value:

The minimum and maximum values for the range can be defined using Cell Value, Current Cell Value, Row Value, Column Value, Cross-dimension Value, or by entering a free-form value. For example, the following rule ensures that the current cell value is ≥ 5 and < 10 . If this condition is met, the cell is turned red.

Condition Definition:

Condition	Source Type	Source Value	Operator	Target Type	Target Value	Process	Actions
CHECK RANGE	Current Cell Value						
RANGE	Value	5		Value	10		

For information on other conditions, see [Conditions Supported by the Rule Builder](#).

Data Validation Conditional Operators

Conditional operators in the data validation rule builder can include these types of comparisons:

- Numeric comparisons, using these operators: =, !=, <, <=, >, >=.
- String value comparisons, using these operators: Equals, Not Equals, Contains, Starts With, Ends With, In, and Not In.

Rules can compare cells with different data types; for example, text and Smart List. The data type of the cell is honored if the referenced value always comes from one cell. This is the case when using Current Cell Value and Cross Dim Member to refer to a cell value. In cases where

the value being compared comes from multiple cells (such as row value, column value, and cell value), the data type is defaulted to double.

When comparing values for these data types:

- For double, a string representation is used for the double value, such as "123.45." If the double is a whole number with no fractional part, such as 123.00, the integer value is used, for example, "123."
- For text, rules use only the text value for comparison.
- All other data types (percentage, currency, non-currency, and date) are treated as double.

Table 22-3 Examples of Results for Starts With, Ends With, and Contains

Operator	Compare Value	Compare To Value
Starts With	2.0	2
	1234.0	12.0
	101.0	10
	2.0	2.0
	2.5	"2."
	"YearTotal"	"Year"
Ends With	2.0	2.0
	2.0	2
	2.5	5
	2.5	".5"
	"YearTotal"	"al"
	"YearTotal"	"Total"
Contains	2.0	2.0
	2.0	2
	2.5	5
	2.5	".5"
	2.5	2.5
	23.567	3.5
	23.567	67
	23.567	"23."
	23.567	".56"
"YearTotal"	"al"	

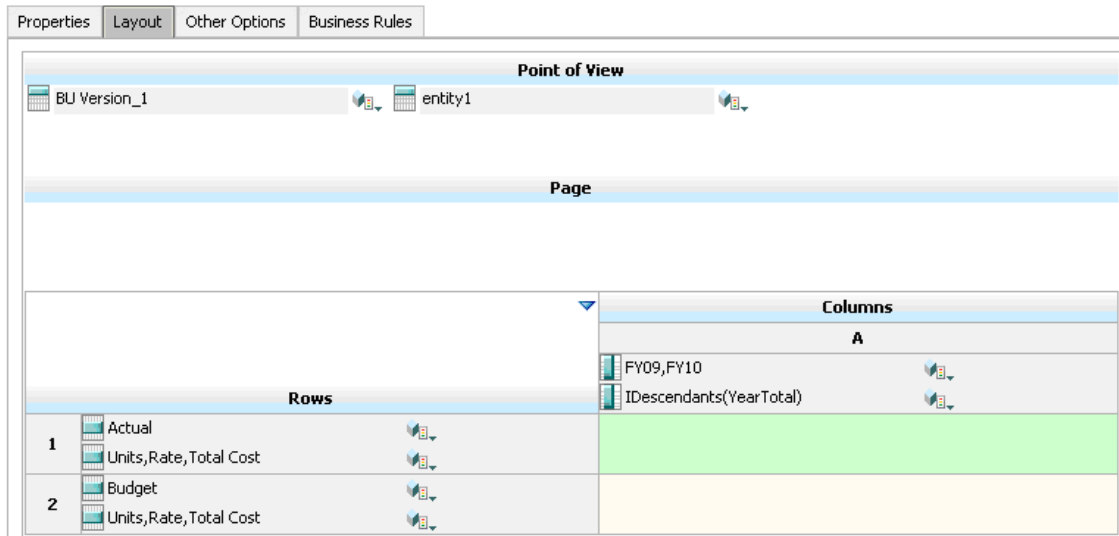
Data Validation Rule Scenarios

These scenarios provide examples of how data validation can help implement business policies.

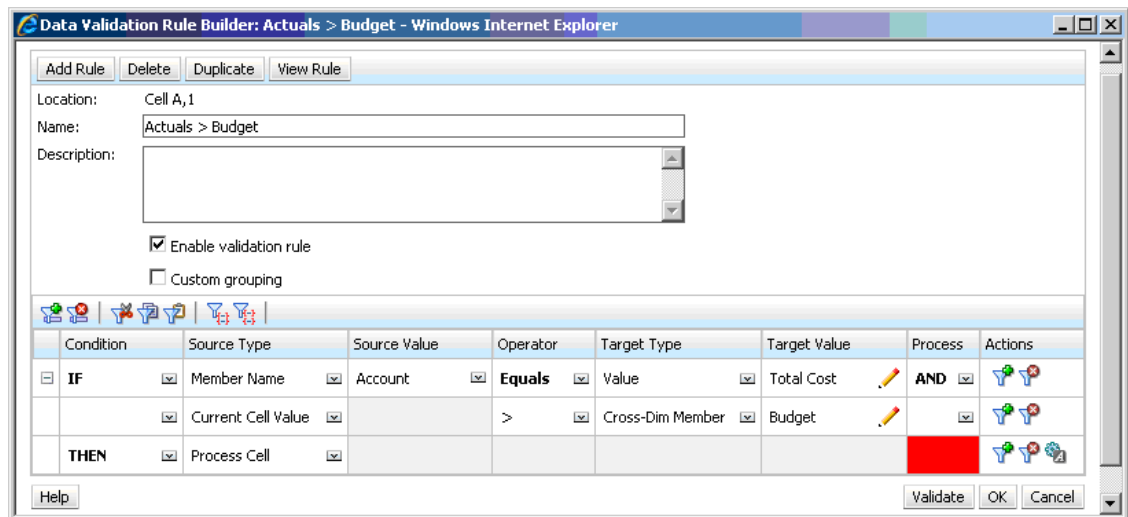
Scenario 1

John is hired by a company called Acme, Inc. as a consultant to design forms and implement data validation rules that enforce some of the company policies. He is asked to implement a validation rule that flags Actual amounts in red if the Total Cost in actuals exceeds the budgeted amount. This test must be repeated for each year and time period in the application. John designs the form and adds a data validation rule at cell level using a cross-dimension member, as shown in the following figures.

Form Layout at Design Time:



Data Validation Rule at Design Time:



Form at Data Entry Time with Data Validations Applied:

		FY09									FY10			
		Jan	Feb	Mar	Q1	Q2	Q3	Q4	YearTotal	Jan	Feb	Mar	Q1	
Actual	Units	3	4	6	13	12	24	21	70	5	14	7	26	
	Rate	5	5	5	15	15	15	9	54	4	4	4	12	
	Total Cost	15	20	30	195	180	360	189	3780	20	56	28	312	
Budget	Units	3	4	6	13	12	24	21	70	5	13	7	25	
	Rate	4	6	3	13	15	15	9	52	5	4	4	13	
	Total Cost	12	24	18	169	180	360	189	3640	25	52	28	325	

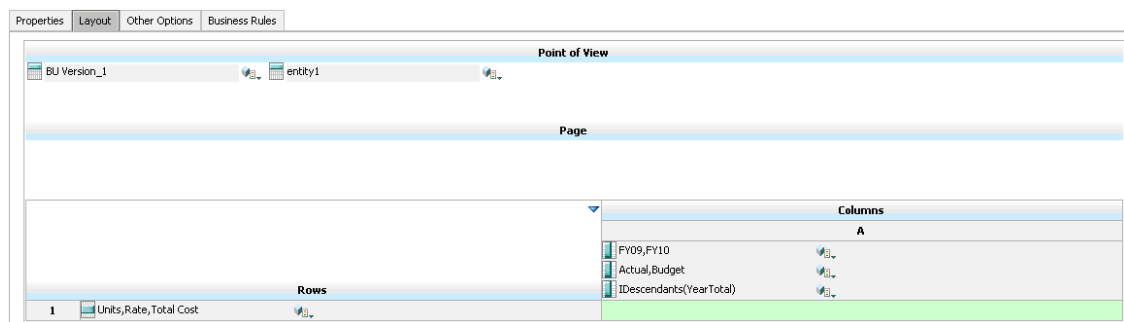
Tips:

- John can split Total Cost into its own segment and apply the data validation rule at that segment for a slight performance gain. However, doing so would increase maintenance as new accounts and scenarios were added to the form.
- If the requirements changed such that only the YearTotal Period in Actual had to be flagged in red, John would have two options. The best option is to add an IF entry to check if the Period member is YearTotal. Another option is to split the YearTotal member into a separate column for better performance. However, doing so would break the spreading logic, the column header for Year would repeat, and the form would be harder to maintain as new years were added.

Scenario 2

After reviewing the form designed by John in Scenario 1, Acme decides that they want Budget on the column instead of the row. To implement this requirement, John can move members within the axes to change the form layout. However, he doesn't need to update the data validation rules. John updates the form as shown in the following figure.

Form Layout at Design Time:



Form at Data Entry Time with Data Validations Applied:

	Version: BU Version_1									Entity: entity1				
	FY09									FY10				
	Actual									Budget		Actual		
	Jan	Feb	Mar	Q1	Q2	Q3	Q4	YearTotal	YearTotal	Jan	Feb	Mar	Q1	Q2
Units	3	4	6	13	12	24	21	70	70	5	14	7	26	
Rate	5	5	5	15	15	15	9	54	52	4	4	4	12	
Total Cost	15	20	30	195	180	360	189	3780	3640	20	56	28	312	

Scenario 3

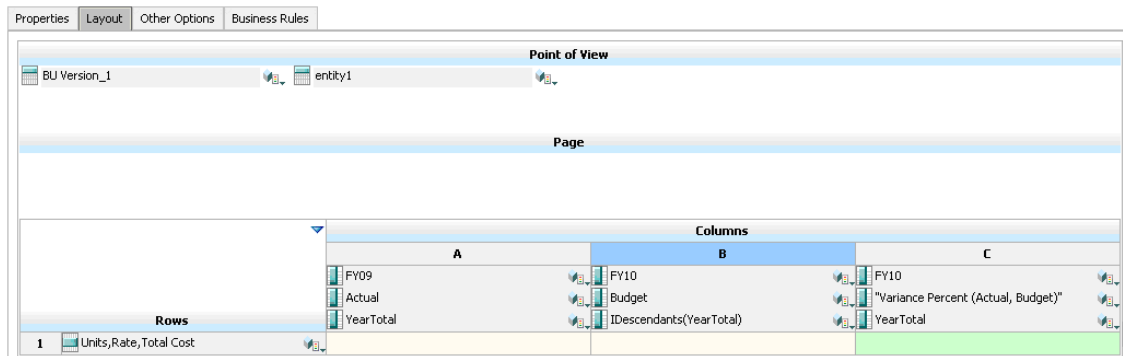
Following the successful rollout of these forms, John is asked to implement the next policy, which is to ensure that this year's Budget amounts are not significantly higher than previous year's Actual amounts. If the difference is greater than 5%, then flag the difference in red.

John decides to use a member with a member formula to calculate the variance between this year's Budget and the previous year's Actual amount. He adds this member formula:

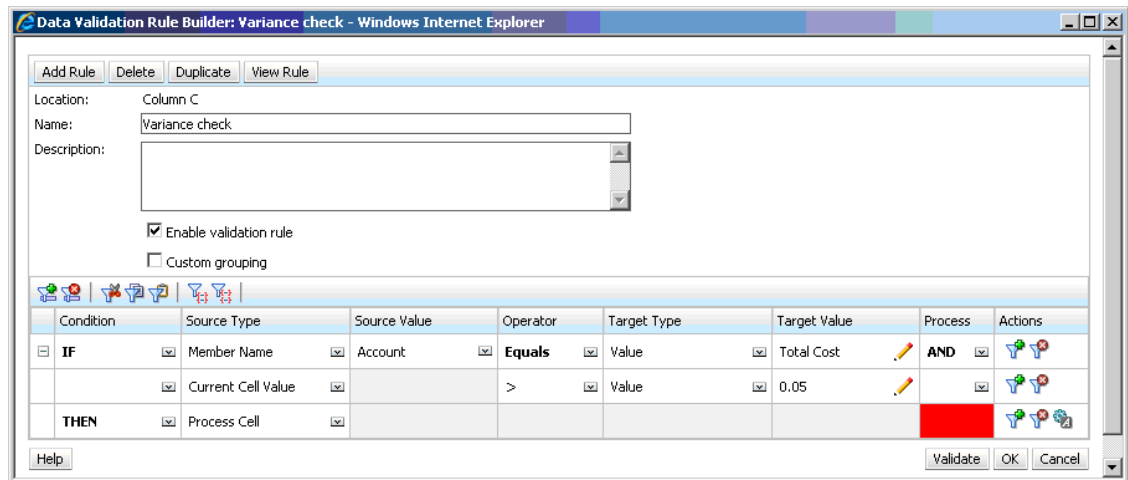
```
@varper(@Prior("Actual", 1, @Relative("Year", 0)), budget)/100;
```

John designs the form and adds a data validation rule at cell level, as shown in the following figure. He uses Member Name to apply the validation only to Total Cost.

Form Layout at Design Time:



Data Validation Rule at Design Time:



Form at Data Entry Time with Data Validations Applied:

Version: BU Version_1							
	FY09	FY10				FY10	
	Actual	Budget				Variance Perce	
	YearTotal	⊕ Q1	⊕ Q2	⊕ Q3	⊕ Q4	⊖ YearTotal	YearTotal
Units	70.0	60.0	20.0	20.0	15.0	115.0	39.13%
Rate	54.0	24.0	4.0	4.0	5.0	37.0	-45.95%
Total Cost	3780.0	1440.0	80.0	80.0	75.0	4255.0	11.16%

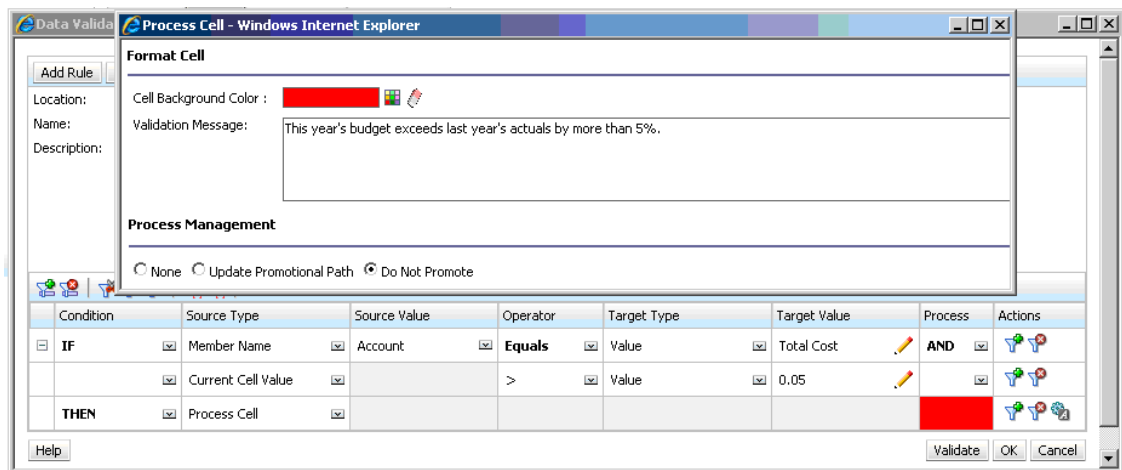
Tips:

- If John isn't allowed to change the outline, or if he experiences performance issues related to member formulas, he can use a formula column. See [Designing Forms with Formula Rows and Columns](#).
- John defines the rule at the Variance Percent column for these reasons.
 - It improves performance. The rule is evaluated only on the cells in the Variance Percent column. If the rule had been assigned to YearTotal, it would have to be evaluated for all Time Periods for the current year budget.
 - It helps users respond to the data validation message. John can add a message to the Variance Percent column stating that the variance is higher instead of adding it to YearTotal. This way, users don't have to look for Variance Percent to determine the difference.
- John could have flagged both YearTotal and Variance Percent in red if this had been part of the requirement.

Scenario 4

In addition to flagging the cell in red, the rule is also required to prevent anyone from promoting the approval unit if this year's Budget is significantly higher (> 5%) than the previous year's Actual amounts. To implement this requirement, all John needs to do is edit the data validation rule's processing instructions and select **Do Not Promote**, as shown in the following figure.

Data Validation Rule at Design Time:



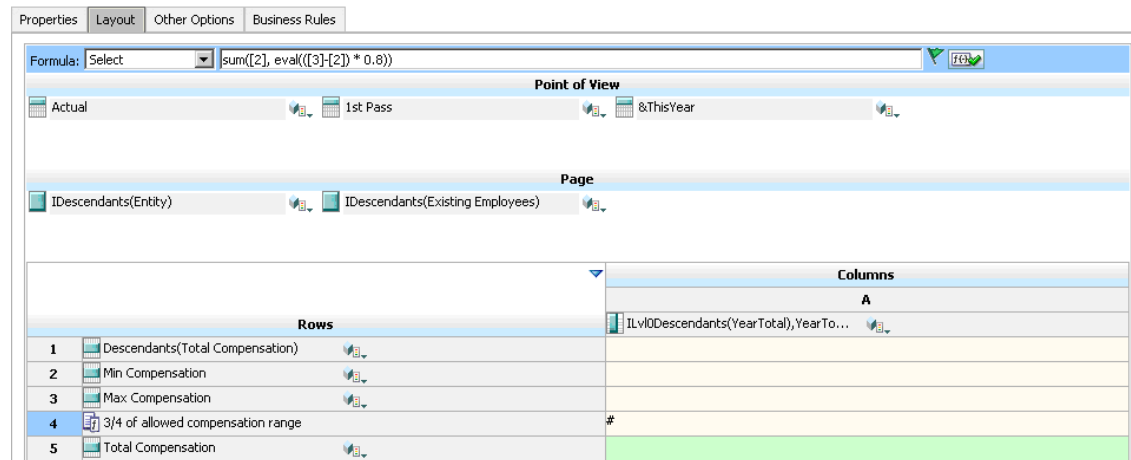
Scenario 5

Finally, John is asked to design a data validation rule to validate that the total compensation for employees in a particular department is within the allowed range. The rule evaluates Existing Employees in the Operations department. It validates that, if Total Compensation is > than Min allowed, and is $\leq \frac{3}{4}$ of the compensation range for the employee's grade, no action is needed.

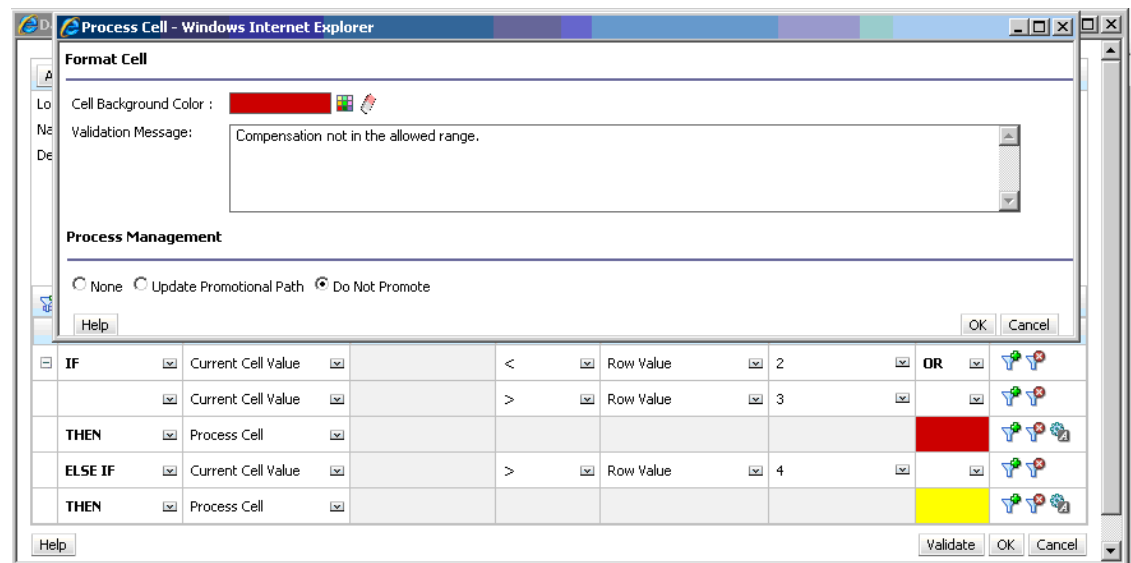
If Total Compensation is greater than $\frac{3}{4}$ of the compensation range, a validation message is provided, and the approval units must be approved by a human resource manager. If the value is less than Min and greater than Max, an error is generated, and users can't promote their approval units.

John opens the Employee Expenses Summary form in the Form Management dialog box. The form has employees and departments on the page, accounts (such as Total Compensation) on the row, and time period on the column. To make validations easier to build, John adds a calculated row to calculate $\frac{3}{4}$ of the compensation range, and adds Min Compensation and Max Compensation members to the form, as shown in the following figures. Min Compensation and Max Compensation for the employee's grade are calculated using member formulas.

Form Layout at Design Time:



Data Validation Rule to Stop Promotion of Approval Units:



Data Validation Rule to Add the Human Resources Manager as Reviewer:

Process Cell - Windows Internet Explorer

Format Cell

Cell Background Color :

Validation Message: Compensation exceeds 3/4 of maximum allowed.

Process Management

None Update Promotional Path Do Not Promote

Add Delete Copy Paste

	Planning Unit Hierarchy	Planning Units	Promotional Path Condition		Assign		Annotations	
			Position	Planning Units	Role	Users	Sender Message	Reviewer Message
1	testPMHierarchy	entity1	Before		Reviewer	HR Manager		

	Condition	Source Type	Source Value	Operator	Target Type	Target Value	Process	Actions
<input type="checkbox"/>	IF	Current Cell Value		<	Row Value	2	OR	
		Current Cell Value		>	Row Value	3		
	THEN	Process Cell						
	ELSE IF	Current Cell Value		>	Row Value	4		
	THEN	Process Cell						

Help Validate OK Cancel

Form at Data Entry Time with Data Validations Applied and Validation Messages Shown:

Scenario: Actual Version: 1st Pass

Page Operations Existing Employees Go

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Salary	3000	3000	3000	3000	3000	3000	3000	3010	3100	3300	3300	3300
Merit												
Overtime					500							
Adjusted Salary	3000	3000	3000	3000	3500	3000	3000	3010	3100	3300	3300	3300
Bonus												10000
Sign On Bonus												
Commissions												
Total Salary	3000	3000	3000	3000	3500	3000	3000	3010	3100	3300	3300	13300
Health Care Costs	55	55	55	55	55	55	55	55	55	55	55	55
Severance												
Other Compensation												
Turnover Adjustment												
Min Compensation	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Max Compensation	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	9500
3/4 of allowed compensation	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	8000
Total Compensation	3055	3055	3055	3055	3355	3055	3055	3065	3155	3355	3355	13355

Salary exceeds 3/4 of maximum allowed.

Data Validation Messages: Salary not in the allowed range. [3]: 1, 2, 2. Salary exceeds 3/4 of maximum allowed. [2]: 1, 2.

Managing Application and System Settings

Set application defaults and system settings such as number formatting, notifications, number of items displayed on a page, aliases, date formatting, and assigning application ownership.

Related Topics

- [What Application and System Settings Can I Specify?](#)
- [Defining User Variables](#)
- [Customizing Your Display](#)
Change the theme of your display or add your company logo or a background image to the Home page.
- [Announcing Upcoming Events](#)
- [Specifying Artifact Labels](#)

What Application and System Settings Can I Specify?

You can control many aspects of the application and the system, such as:

- How to display thousands, decimals, and negative numbers in forms
- Define the actions about which you want to be notified
- Display the full names of users rather than user IDs
- Set reporting options
- Assign application ownership to another Service Administrator

To change application and system settings:

1. Click **Application**, and then click **Settings**.
2. Specify defaults for the current application. For descriptions of the settings, see the Application Settings table below.
3. Specify system settings. For descriptions of the settings, see the System Settings table below.
4. Click **Save**.

Table 23-1 Application Settings

Application Setting	Description
Alias Setting	For option descriptions, see Specifying a Default Alias Table and Setting Member and Alias Display Options .
Number Formatting	For option descriptions, see Number Formatting .
Approvals	Select whether to display aliases, show the approval units that are not started, and show approval units as aliases in approvals notifications.
Notifications	Enable notifications for task lists, approvals, and job console.

Table 23-1 (Cont.) Application Settings


Application Setting	Description
Page	<p>Set defaults for indenting members on a page and setting the number of items on the page drop-down.</p> <p>Note that the Number of Items on the Page Drop-down option lets you shorten the member list so that the Search box can be more easily seen. If the list is shortened to 10 members, for example, then you won't need to scroll to see the Search box.</p>
Other Options	<p>Set these other configuration options:</p> <ul style="list-style-type: none"> • Date Format • Attribute Dimension Date Format • UI Display: Choose Standard Interface or Simplified Interface. • Partial Grid Fetch Size (Rows,Columns): Enter number of rows and columns in the format <code>nn,nn</code> • Suppress Application Management Options in Smart View • Enable Data Load for Ad Hoc Read-Only Role: Default is No. Select Yes to enable data load for users with Adhoc read-only role. • Set Number of Seconds Before Rules Run in Background: Enter a value between 0 and 600. <div style="border: 1px solid #0070C0; padding: 10px; margin: 10px 0;"> <p> Note:</p> <p>Rules that are set to automatically run when a form is loaded or saved never run in the background.</p> </div> <ul style="list-style-type: none"> • Client Log Level: All error, warnings, and informational messages from the connected data source are displayed when they occur, but you can choose which of these message levels to record in a browser console log file. This setting is only available for web interfaces using Oracle JET technology. Select a message level to display and record: <ul style="list-style-type: none"> – None: Suppress all messages. – Information: All messages, including warnings and errors—recommended to diagnose problems. May adversely impact performance. – Warning: Warnings and error level messages. May adversely impact performance. – Error: Error messages only—recommended for general use. Has minimal impact on performance. – General: Information-level messages plus all server responses and requests. Adversely impacts performance. • Enable User Formulas in Ad Hoc: If you select Yes, in an ad hoc grid, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly. • Filter Out Excluded Members in Segment Drop-down: Default is Yes. Choose No to display the excluded members in the row drop-down POV in forms. • Forms Version: Specify a forms version. For existing applications, the default is Forms 1.0. Enabling Forms 2.0 is only supported if Redwood Experience is enabled. Newly created applications will default to Forms 2.0. This setting is application-specific and can vary across applications.

Table 23-1 (Cont.) Application Settings

Application Setting	Description
Predictive Planning	<p>Predictive Planning options for specifying:</p> <ul style="list-style-type: none"> • The Prediction Interval to use for worst case and best case values. Also applies to Auto Predict. • The Prediction Cube to select the cube the forms are associated with, where you want to perform predictions. • The Source Cube to select the cube where historical actuals are stored. This can be the same cube as the Prediction cube, or a different cube. • The POV for the source cube. You can select members from all dimensions when defining the POV for the historical data source. If you don't specify a member for a dimension, during predictions, Predictive Planning uses the Actuals member from the Scenario dimension and for the other dimensions, uses the members in the form's POV. <p>Note the following:</p> <ul style="list-style-type: none"> • If you are using different cubes for source data and predictions, they must be in the same application. • For each prediction cube, you can specify a source cube (which can be the same as the prediction cube or a different cube) and the POV for the source cube. • You can select the POV for each cube in the application.
Digital Assistant Settings	<p>If you have implemented Oracle Digital Assistant for Enterprise Performance Management, specify configuration settings for the assistant.</p> <p>Note: These settings are part of a larger configuration process to enable you to work with Oracle Digital Assistant for Enterprise Performance Management. You must complete the configuration steps before using the assistant. See <i>Configuring Applications in Getting Started with the Digital Assistant for Enterprise Performance Management</i>.</p> <ul style="list-style-type: none"> • Channel ID: Enter the channel ID generated when you created the Oracle Web channel for Oracle Digital Assistant for Enterprise Performance Management. • Service Name: Enter the Digital Assistant URL, which is the Oracle Digital Assistant Service URL that you see when you log on to the service. Enter the URL without either <code>http://</code> or <code>https://</code> preceding it.
Smart View Add-on	<p>Select the Google Sheets check box to enable support for Smart View in Google Sheets. When selected, users can connect to their applications from Google Sheets and use Smart View features to view and analyze data in Google Sheets.</p>

Table 23-2 System Settings

System Setting	Description
Display Users' Full Names	<p>When selected, the system displays the user's full name (for example, Max Hennings). When cleared, the system displays the user's ID (for example, VHennings).</p>
Include Shared Members in Cube Refresh	<p>When selected, shared members will inherit the highest security access based on a combination of the access assigned to the base member and parent of shared member.</p> <p>When cleared, shared members will inherit the security access assigned to the base member.</p>

Table 23-2 (Cont.) System Settings


System Setting	Description
Default Ancestor Access	<p>Select an option to specify the default user access to ancestor members in ad hoc grids and the Member Selector:</p> <ul style="list-style-type: none"> • None: By default, users are not able to see the ancestor members of members that they have access to unless they are explicitly granted access to them. When this option is selected, the system works the same way it did prior to the 24.03 update. • Read: By default, users are granted Read Only access to the ancestor members of members that they have access to unless they are explicitly granted Write or Display access, which would override this default. • Write: By default, users are granted Write access to the ancestor members of members that they have access to unless they are explicitly granted Read or Display access, which would override this default. • Display: By default, users are granted Display Only access to the ancestor members of members that they have access to unless they are explicitly granted Read or Write access, which would override this default. <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;"> <p> Note:</p> <p>Members with Display Only access will be displayed, but instead of data values in the cells associated with those members, users will see #NoAccess.</p> </div> <p>See Accessing Ancestor Members in Ad Hoc Grids in <i>Working with Oracle Smart View for Office</i> for more information on working with the Default Ancestor Access setting.</p>
Email Character Set	Select UTF-8 or Regional Setting .
Business Rules Notification	If set to Yes , notifies users or groups when rules (which are enabled for notification in Calculation Manager) are completed or encounter errors. In Notify These Users , select the users or groups to notify.
Allow Drill Down on Shared Members in Ad Hoc	<ul style="list-style-type: none"> • Yes enables drilling on shared members in an ad hoc grid. When set to Yes, the Drill to All Levels in Base check box is displayed. Note that block suppression is not supported when this option is set to Yes. To disable block suppression: <ul style="list-style-type: none"> – In Oracle Smart View for Office, in Options, Data Options, disable Suppress Missing Blocks. – In the web, in Preferences, Ad Hoc Options, disable Missing blocks on rows. • No disables drilling on shared members in an ad hoc grid.


Table 23-2 (Cont.) System Settings

System Setting	Description
Drill to All Levels in Base	<p>Allows ad hoc grid users to drill down (or zoom in) from shared members to all levels within the base hierarchy. This check box option applies to Standard-mode applications only.</p> <p>The Drill to All Levels in Base check box appears when Allow Drill Down on Shared Members in Ad Hoc is set to Yes.</p> <p>A shared member is often a parent member in its base hierarchy. With the Drill to All Levels in Base check box enabled, users can drill down from the shared member to the base hierarchy using the zoom options, All Levels or Bottom Level.</p> <p>When the Drill to All Levels in Base check box is disabled, the user may zoom in to the various levels of the base hierarchy one level at a time using the Next Level zoom option.</p> <p>Multi-cell zoom-in on shared members is not supported.</p>
Minimize Approval Process Emails	<p>Reduces the number of emails a user receives when using Approvals. The default is No.</p> <p>If Yes is selected, only one email notification (for the approved parent entity) is sent to the new owner of the planning unit. Separate email notifications aren't sent for every child entity in the planning unit hierarchy. If No is selected, owners that are set at parent nodes will receive emails for the selected node as well as an email for each child node.</p>
Enable Use of the Application for	<p>Determines whether users can access the application in administration mode, such as during backups. When you select Administrators, if any non-administrative users are logged on to the application, they are forced off the system and will not be able to log on. To restore access to an application for all users, select All users.</p>
Assign Application Owner	<p>Assigns ownership of the application to another Service Administrator. For more information about application ownership, see Managing Application Ownership.</p>
Enable the Display of Substitution Variables	<p>Set how substitution variables display in the Member Selection dialog box when users respond to runtime prompts in business rules. Display All displays all substitution variables. Display None displays no substitution variables. Enable Filtering displays only substitution variables that are valid for the runtime prompt.</p>
Suppression Mode	<p>Choose a suppression behavior for ad hoc grids in the web and in Smart View for cases where rows and columns contain missing data or zeroes.</p> <ul style="list-style-type: none"> • Suppress Missing values only (default): Suppresses rows, or columns, or both that contain No Data/Missing. • Suppress Missing also Suppresses Zeros: Suppresses rows, or columns, or both that contain both No Data/Missing and Zero.
Smart View Ad Hoc Behavior	<p>All new and recreated applications are automatically set to Standard. For existing and migrated applications, choose to enable enhanced ad hoc features and behaviors in Smart View:</p> <ul style="list-style-type: none"> • Native (default): Does not enable enhanced ad hoc features. Supported for all Smart View releases. • Standard: Enables enhanced ad hoc features. Supported for Smart View release 11.1.2.5.900 and later. <p>For a complete description of the enhanced ad hoc features available in Standard mode, see Smart View Behavior Options in EPM Cloud in Working with Oracle Smart View for Office.</p>

Table 23-2 (Cont.) System Settings

System Setting	Description
Use All Alias Tables on Refresh	<p>Specify whether alias names entered into ad hoc grids are evaluated using the currently selected alias table or against all alias tables</p> <ul style="list-style-type: none"> • Yes: The input is evaluated against all alias tables and all member names. • No: The input is evaluated against the currently selected alias table and all member names. This is the default setting. <p>If the system cannot identify the input as a valid member name or alias, the input will be displayed as a comment.</p>
Enable currency calculation based on scenario time period	<p>Choose whether to enable currency calculations in forms and batch currency rules based on the scenario time period. Selecting Yes restricts currency calculations to the range defined for the scenario time period. Selecting No calculates everything based on exchange rates and reporting currency and is not restricted based on the scenario time period range. Note that the behavior of the currency conversion script is dependent on this application setting at the time the rule is executed.</p>
Export EPM Cloud Smart List textual data during daily maintenance for incremental data import	<p>Choose whether to perform a complete export during the daily maintenance process or to create an application backup:</p> <ul style="list-style-type: none"> • Yes: Performs a complete export, such that data, including the business process Smart List data, can be incrementally imported to an application (this option may lengthen the maintenance process duration) • No (default): Creates an application backup during the maintenance process, such that data can be used as part of a full restoration <p>Note that this setting applies only to Oracle Essbase that does not support hybrid.</p> <p>For more information, see Exporting Smart List Textual Data During Daily Maintenance for Incremental Data Import in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>.</p>
Link Accounts by Default	<p>For block storage (input) cubes, select whether to XREF linked account members by default:</p> <ul style="list-style-type: none"> • Yes (default): XREFs will be created on account members, and the application will work the same way it has in earlier releases. • No: XREFs will not be created for account members, which may improve the application's performance. With No selected, after Cube Refresh is run, all existing XREFs on account members will be deleted, and non-source cubes will no longer show data from the source cube. <p>Note that HSP_LINK and HSP_NOLINK UDAs on specific account members override the XREF setting for those account members. For example, if this option is set to No and you use the @XREF function to look up a data value in another cube to calculate a value from the current cube, you can add the HSP_LINK UDA to such members to create the @XREF function only for these specific members. If this option is set to Yes, HSP_NOLINK works the same way it worked in earlier releases and prevents XREFs from being created on specific members.</p>


Table 23-2 (Cont.) System Settings

System Setting	Description
Attribute Dimension Reorder Threshold	Enter a threshold value between 0 and 500 (500 is the default value). For attribute dimensions, when the number of members under a given parent exceeds the specified threshold value, then the members will be reordered at the end of a metadata load instead of during the load. Depending on the specific shape of the attribute dimension, adjusting this number can sometimes have an impact on performance. In general, this setting can be ignored unless attribute dimension load times degrade beyond acceptable levels.
Set Reporting Options	If you're using the next-generation Reports reporting solution, Oracle recommends you use this setting to upload any TrueType fonts that your company uses to produce reports. To upload TrueType fonts, click Report Settings , click Manage Fonts , click  , and then select the font files to upload. See Working with the Reports Reporting Solution in <i>Working with Planning</i> .

Defining User Variables

You can define user variables to help users focus on particular members, such as their department's expenses. For example, you can create a form with entities on the rows, and a user variable called Department. You can limit the number of rows displayed on the form by selecting a member for the Department user variable, such as Sales. Later, you can select another value for Department, such as Marketing.

To update user variables:

1. Click **Tools**, and then click **Variables**.
2. Click the **User Variables** tab.
3. Click  next to the variable to change.
4. On **Member Selection**, select members.

Customizing Your Display

Change the theme of your display or add your company logo or a background image to the Home page.

On the **Appearance** page, you can change the general look and feel of your Oracle Enterprise Performance Management Cloud environment.

All newly created or re-created EPM Cloud services, business processes, and applications use Redwood Experience as the default theme. Redwood Experience not only provides an attractive look and feel, but it also includes certain features, such as dynamic tabs, that are not available in the other themes. For more information about Redwood Experience, see Using Redwood Experience in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

If you opt not to use Redwood Experience, you can choose instead from a list of predefined classic themes with different background colors, icon styles, and so on. You can also add a

branding logo and background images to the Home page and hide the business process name. For general information about using the Home page, see [About the Home Page](#).

 **Note:**

You can set your profile picture to display at the top of the Announcements panel of the Home page in **User Preferences**. Click **Tools**, and then **User Preferences**.

For more information, see Setting Your Profile Picture in *Working with Planning*.

To customize your display, see Configuring EPM Cloud Appearance in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*.

Announcing Upcoming Events

Create and send announcements to alert users about upcoming events, such as system maintenance or the running of jobs. Announcements are displayed in the Announcements area on the application's Home page.

For more information about the Announcements area, see [About the Home Page](#)

To create an announcement:

1. Click **Tools**, and then click **Announcement**.
2. Click **Create**, and enter information such as:
 - A subject that summarizes the purpose of the announcement
 - The start date; when to send the announcement. The end date is optional.
 - The content. You may need to select an editing mode (rich text or source code) first.

Specifying Artifact Labels

The **Artifact Labels** page on the **Tools** cluster enables Service Administrators to customize artifact labels (artifact names, descriptions, and so on) based on the user's browser locale.

A few examples:

- If you create a form with a cryptic name that you don't want displayed to the user, you can define a meaningful name for the form that is displayed in the language of the user.
- If you want to create a useful instruction for an artifact that only displays in the language of the user, for example:

"This formula calculates the number of regular employees away on a Leave of Absence."

Related Links

- [Which Artifact Labels Can be Localized?](#)
- [Working With the Artifact Labels Grid](#)
- [Adding Languages and Defining Localized Artifact Labels](#)
- [Exporting and Importing Artifact Labels for Editing](#)

Which Artifact Labels Can be Localized?

The application supports changing the language for the following artifacts:

- Card
- Cluster
- Dashboard
- Data Map
- Data Validation Rule
- Dimension
- Folder
- Form
- Member
- Menu
- Menu Item
- Navigation Flow
- Cube
- Approval Unit Hierarchy
- Report
- Rule
- Ruleset
- Smart List
- Smart List Entry
- Tab
- Task
- Task List
- Template
- User Variable
- Valid Intersection

Working With the Artifact Labels Grid

The **Artifact Labels** page displays an Excel-style spreadsheet grid that is filtered by artifact and property type.


The row axis of the grid displays the artifacts and their properties.

The column axis of the grid displays the following columns:

- **Artifact:** The type of artifact (for example, Task List or Rule)
- **Property:** The artifact's property type (for example, Name, Description, and so on)
- **Default:** Displays the artifact labels that were defined when the artifact was created.

When a language is added, a new column displays to the right of the **Default** column.

To view and filter the **Artifact Labels** grid:

1. Click **Tools**, and then click **Artifact Labels**.
2. To filter:
 - a. Click , and then select the artifacts you want to work with. For some artifacts, you can further filter by property type.
 - b. Click **Apply** to close the **Filter** window and display the artifact grid filtered by artifact type and property type.


Adding Languages and Defining Localized Artifact Labels

Service Administrators can add a language for a given artifact to the **Artifact Labels** grid from a list of supported languages. You can select only one language at a time. When you add a language, a new column for that language is added to the grid to the right of the **Default** column. The cells in the language-specific column are editable.

Tip:

Use this method to add labels directly in the artifact labels grid. This method is ideal if you only need to add or update a few labels at a time. For bulk changes or edits on artifact labels; for example, terminology changes that affect multiple labels, use the export feature to edit in Excel, then import. See [Exporting and Importing Artifact Labels for Editing](#).

To add a language:

1. Click **Tools**, and then click **Artifact Labels**.
2. Click , and then select the artifacts you want to work with. For some artifacts, you can further filter by property type.
3. Click **Apply**.
4. Click **Add Language**.
5. Select from the list of supported languages.
6. In the language-specific column, enter artifact labels into the editable cells for each artifact property (Name, Description, and so on).

Note:

Using Ctrl+C (Copy) and Ctrl+V (Paste) are not supported in the artifact labels grid.

7. Click **Save**.

 **Note:**

When you define a localized artifact label for the Default navigation flow (for example, editing the name of an icon on the Home page), your update will automatically propagate to all navigation flows. However, if you define a localized artifact label for another navigation flow that isn't the Default flow, then that update will override the label coming from the Default flow.

Exporting and Importing Artifact Labels for Editing

You can export all the artifact labels in a given language to edit them. Only artifacts that already have labels will be exported. The labels are exported in an Excel file format (XLSX). After you edit the labels, you can import them back into the application.

 **Tip:**

Use this method for bulk changes or edits on artifact labels by language; for example, terminology changes that affect multiple labels. For updates to individual artifact labels, you can edit them directly in the artifact grid. See [Adding Languages and Defining Localized Artifact Labels](#).

To export all artifact labels by language for editing and then import them:

1. Click **Tools**, and then click **Artifact Labels**.
2. Export the XLSX file containing all of the artifact labels:
 - a. Click **Actions**, and then **Export**.
 - b. Select the target location for the export file:
 - **Local**: Saves the export file to a location on your local computer.
 - **Outbox**: Saves the export file to the server. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
 - c. Choose a language.
 - d. Click **Export**.
3. Edit the labels in the XLSX file.
4. Import the XLSX file:
 - a. Click **Actions**, and then **Import**.
 - b. Select the location of the import file:
 - **Local**: Loads the import file from a location on your computer. For **Source File**, click **Browse** to select the import file on your computer for the artifact you're importing.
 - **Inbox**: Loads the import file from the server. Enter the name of the file in **Source File**. See [Uploading and Downloading Files Using the Inbox/Outbox Explorer](#).
 - c. Click **Import**.

Accessing More Administrative Tasks


Use the information in this chapter to perform additional administrative tasks.

Related Links

- [About the Navigator Menu](#)
- [Administering Data Load Settings](#)
- [Importing Using Data Integration](#)
- [Administering Action Menus](#)
- [Administering Alias Tables](#)
- [Administering Dimensions](#)
- [Administering Forms](#)
- [Administering Rules](#)
- [Administering Rules Security](#)
- [Administering Smart Lists](#)
- [Administering Task Lists](#)
- [Setting User Preferences](#)
- [Administering Variables](#)
- [Clearing Cell Details](#)
- [Copying Data](#)
- [Copying Versions of Data](#)
- [Administering Application Diagnostics](#)
- [Managing Approvals](#)
- [Managing Approval Unit Hierarchies](#)
- [Assigning Approval Unit Hierarchy Scenario and Version Combinations](#)

About the Navigator Menu

You can access additional administrative tasks from the Navigator Menu.

Clicking **Navigator**  on the Home page displays a list of links that connect you to more business process functionality.



Note:

Some of the links are available only if you're accessing the business process from the desktop.

Administering Data Load Settings





Specify parameters to enable data to be loaded directly into an application database. Optionally, you can use advanced settings if you want to load details to child members of parent dimension members based on unique identifiers for the driver dimension.



For example, a company might load the Employee dimension member with account data for Start Date, Position, Salary Basis, and Pay Type. Because the human resource data includes placeholders for new and existing employees, the company could set up the following advanced settings:

- Data load dimension parents: New Employees, Existing Employees
- New Employees unique identifiers: Start Date, Position
- Existing Employees unique identifiers: Salary Basis, Pay Type

During data load, child members of New Employees and Existing Employees are evaluated for data updates. The unique identifiers Start Date, Position, Salary Basis, and Pay Type determine if existing data load dimension values are updated, or if new values are added: If the unique identifier's data values are the same, data is updated. If the data value is different, the next available child member is used.

To specify parameters for loading data:

1. From the Home page, click **Navigator** , and then under **Integration**, click **Data Load Settings**.
2. For **Data Load Dimension**, select the dimension (such as Employee) for which data is loaded for the application.
3. For **Driver Dimension**, click  to select the dimension into which data is loaded.
For example, if you're loading data to Employee, the driver dimension might be Account.
4. Select the members of the driver dimension.
For example, if the driver dimension is Account, driver dimension members might include Start Date, Grade, Position, Salary Basis, and Pay Type.
5. **Optional:** To use advanced settings, complete these steps.
 - a. Add a row by clicking .
 - b. To the right of the new field, click  and select a parent member.
For information about selecting members, see [Using the Member Selector](#).
 - c. To the right of the parent member, under **Driver Dimension Unique Identifiers**, select members as unique identifiers. (Members selected for this field must be included in the list of selected Driver Dimension members at the top of the page.)

Each parent member must include at least one unique identifier member. These members determine if existing data load dimension values are updated, or if new values are added.
 - d. If necessary, continue adding rows by repeating the previous steps.
 - e. To duplicate or delete a row, click within a row, and click  or .



Importing Using Data Integration

Data Integration is the mechanism by which integration processes are performed in Oracle Fusion Cloud EPM. Designed for busy administrators and users, you can define file-based and direct integration sources, create mapping rules to translate source data into the required target format, and execute and manage the periodic data loading process. Common integration tasks are done using an easy-to-navigate interface that supports and conforms to how you work.

For a general understanding of the integration process, see *Defining a Data Integration in Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to define and run file-based data integrations in the business process.	 Loading Data Into Planning Using Data Integration
Learn how to register applications, define period mappings, define category mappings, and then create and run a file-based data integration.	 Loading Data Using Data Integration

Administering Action Menus

Related Topics

- [Creating and Updating Action Menus](#)
- [Working with Action Menu Items](#)
- [Defining Action Menu Items](#)

Creating and Updating Action Menus





Service Administrators can create right-click (or action) menus and associate them with forms, enabling users to click rows or columns in forms and select menu items to:

- Launch another application, URL, or business rule, with or without runtime prompts
- Move to another form
- Move to Manage Approvals with a predefined scenario and version
- Open Job

The context of the right-click is relayed to the next action: the POV and the Page, the member the user clicked on, the members to the left (for rows), or above (for columns).

When designing forms, use **Other Options** to select menus available for Form menu item types. As you update an application, update the appropriate menus. For example, if you delete a business rule referenced by a menu, remove it from the menu.



To create, edit, or delete action menus:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Action Menus**.
2. Perform an action:
 - To create an action menu, click , enter the menu's name, and then click **OK**.
 - To edit details of an action menu, select it, and then click . See [Working with Action Menu Items](#).
 - To delete action menus, select them, click , and then click **OK**.

Working with Action Menu Items

The **Edit Menu** page displays menu items on the current action menu, including names, labels, required dimensions, icon, and type, such as URL, Form, Business Rule, Manage Approvals, Menu Header, Form, and Job.

To work with action menu items:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Action Menus**.
2. Select a menu, and then click .
3. **First time only:** To add the first item to the menu, click **Add Child** and **Save**.
4. Select a menu item and:
 - To add menu items below the selected item, click **Add Child** (available for Menu Header menu types).
 - To add menu items at the same level as the selected item, click **Add Sibling**.
 - To edit menu items and define the menu item properties, click **Edit Menu Item**.
 - To delete menu items, click **Delete Menu Item**.
 - To change the order of menu items within the same level, click **Move Up** or **Move Down**. You can move multiple items.
5. Click **Save**.
Click **Save As** to save the current selections under a new menu name.

Defining Action Menu Items

To define action menu items:



1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Action Menus**.
2. Select a menu and then click .
3. Select the menu item, and then click **Edit Menu Item** or **Add Sibling**.
4. Define the menu item:

Table 24-1 Edit Menu Item Options

Item	Description
Menu Item	Enter a unique name containing only alphanumeric and underscore characters, with no special characters or spaces
Label	Enter text to be displayed when the menu is selected. Spaces and special characters are allowed. Menu labels display in the user interface. Labels can be text or can reference a resource variable by name. For example, to set a menu's label to File, set it to <code>File</code> directly or to the name of a resource, such as <code>LABEL_FILE</code> , which can be localized.
Icon	This option is not currently supported.

Table 24-1 (Cont.) Edit Menu Item Options

Item	Description
Type	Select the menu item type to determine available properties.

 **Note:**

No properties are available for Menu Header.

- **URL:** Create a menu that opens the specified URL.
- **Form:** Create a menu that launches the selected form. The member selection context for the member, page, and POV is retained when users right-click in the source form. If the target form contains these dimension members on the page, its page is set to match the context. When launched from the web, the form opens in the web; when launched from Oracle Smart View for Office, the form opens in Smart View. Action menus referencing forms enabled as flex forms will open these forms as flex forms in Smart View and as simple forms in the web.
- **Business Rule:** Create a menu that launches the selected business rule.
- **Manage Approvals:** Create a menu that opens Manage Approvals to work with approval units.
- **Dashboard:** Create a menu that launches the selected dashboard. The cell context is retained when users right-click in the source form, and the dashboard is opened in a new dynamic tab.

 **Note:**

The dynamic tabs feature is available only if Redwood Experience is enabled.

- **Menu Header:** Create a menu under which you can create children menu items. To display a separator bar on the menu at this item, enter one hyphen as the Label. In this case, the Required Dimension list isn't available.
- **Previous Form:** Create a menu that returns the user to the previous form.
- **Copy Version:** Create a menu that opens Copy Version to enable administrators to copy data for the current form.

 **Note:**

Copy Version is not available to Power Users and Users.

Table 24-1 (Cont.) Edit Menu Item Options

Item	Description
Required Parameters	Select a dimension and member, or select an option for where the menu item displays: Point of View, Page, Row, Column, Members Only, Cell Only. For example, if you select Account, users can right-click Account members on a form to open the menu. If you select Row, the menu is available when users right-click a row. Selecting None makes the menu available whenever the user right-clicks in the form.

 **Note:**

In Smart View, for action menus attached to forms (simple forms or flex forms), the Page and POV options are not supported.

- Define menu item properties, which differ for menu item types:

Table 24-2 Options for Menu Item Types

Type	Options
URL	<ol style="list-style-type: none"> In URL, enter the complete URL to which to direct the user. For example: <code>http://server name/HFM/Logon/HsvLogon.asp</code>. URL type action menus automatically launch a new tab. Select Use Form Context to replace the bracketed dimension name in the URL (for example, <code><Entity></code> or <code><Account></code>) with the member name of the corresponding dimension from the form's page or POV. For example, to return Entity, Scenario, Version, and Account dimension's members in the URL, enter the URL and enable Use Form Context: <code>http://yourcompanyurl/EntDim=<Entity>&test['VERSION']=<Version>&Acc=<Account></code> The URL will open in a new tab as: <code>http://yourcompanyurl/EntDim=<410>&test['VERSION']=<working>&Acc=<1110></code> If Use Form Context is disabled, then the URL will be launched in a new tab as is without the context replacements.
Form	<ol style="list-style-type: none"> In Form Folder, select the folder containing the destination form. In Form, select the form.

Table 24-2 (Cont.) Options for Menu Item Types

Type	Options
Business Rule	<ul style="list-style-type: none"> a. In Cube, select the cube for which the business rule is available. b. In Business Rules, select the business rule to launch. c. In View Type, select how to display runtime prompt pages: <ul style="list-style-type: none"> • Classic View: Use the default application view • Streamline View: Display each runtime prompt on a different line d. Optional: In Window Title, enter a title to display instead of Runtime Prompts. e. Optional: In OK Button Label, enter the text to display for the OK button. f. Optional: In Cancel Button Label, enter the text to display for the Cancel button. g. Optional: In Launch Confirmation Message, enter text to display when the business rule is invoked, but before it's launched. This option enables Service Administrators to provide meaningful messages to users about the consequences of launching business rules.
Manage Approvals	Specify the approval unit to which the user is directed by selecting a Scenario and a Version .
Dashboard	In Dashboard , select the dashboard.
Previous Form	Enter the name of the menu item that will return the user to the previous form.
Copy Version	<p>Enable administrators to use Copy Version to copy form data for the current form, including supporting details, annotations, cell text, and cell documents to another version. Select the following default values:</p> <ul style="list-style-type: none"> a. In Scenario, select the scenario from which to copy. b. In Copy From, select the version that contains the data to copy. c. In Copy To, select the version to which to copy the data.

 **Note:**

Copy Version is not available to Power Users and Users.

6. Click **Save**.

Administering Alias Tables

Related Topics

- [About Aliases](#)
- [About Alias Tables](#)
- [Working with Alias Tables](#)
- [Specifying a Default Alias Table and Setting Member and Alias Display Options](#)

About Aliases

You can assign alternate names, or aliases, to Account, Currency, Entity, Scenario, Period, Version, Years, and user-defined dimension members. The application allows up to 30 aliases per dimension member, including the default alias. Aliases can have the same name within an alias table and across alias tables.

Aliases can also have:

- The same name as a member
- The same alias on members that are parent and child
- The same name for members from different dimensions or from the same dimension

Note:

- You can't have the same alias for two members that are siblings because there would be no way to uniquely identify the member. This rule is enforced by the application for base members, but not for shared members.

This rule isn't enforced for shared members because you can't directly set aliases for shared members; shared member aliases are inherited from the alias of their base member. It's possible to create an alternative hierarchy where you can have two shared members that have the same alias and are siblings.

However, this situation is discouraged if you want to reference these members by their aliases from an adhoc grid because, when you type the alias into the grid and submit it to the application, the application can't uniquely resolve this member and it will return an error. If you're using the alias for display purposes only then there will be no issue, but this design is discouraged because, visually, there is no way to differentiate between these two members.

- Although aliases can have the same name as a member, be careful not to set the alias of member1 to be the same name as member2. This can lead to unintended results and will cause confusion on the form grids.
- Member names must be unique so that they can be used in rules and form designs.

About Alias Tables

You can create and update alias tables, and set a default alias table for the application. Follow naming conventions in [Naming Restrictions](#).

Multiple alias tables support, for example, these language combinations:

- English, French, German, Spanish, and Italian
- Japanese and English
- Korean and English
- Turkish and English

**Note:**




Alias table support isn't restricted to these language combinations.

You can set alias tables to display members in an application. Users can set alias tables in preferences.

Working with Alias Tables

You can add, edit, rename, and delete alias tables or clear alias table values. You can also copy alias table content from one table to another.

To work with alias tables:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Alias Tables**.
2. Choose a task:
 - If adding an alias table, click , and then in **Add - Alias Table**, enter a name.
 - If editing or renaming alias tables, select the alias table, then click , and then for **Edit - Alias Table**, enter a name.
 - If deleting alias tables, select the alias table, and then click **Delete**.

**Note:**

You can't delete the Default alias table.

- If clearing the values in an alias table, select the alias table to clear, then click **Clear Values**.

**Note:**

Clearing the alias table removes the content of the table, but doesn't remove the table.

- If copying alias table content, select the alias table, click **Copy**, then select the destination alias table, and then click **Copy**.

**Note:**

The destination alias table must exist. Copying doesn't create tables.

3. Click **OK**.

Specifying a Default Alias Table and Setting Member and Alias Display Options

If you create alias tables with aliases for Account, Currency, Entity, Scenario, Period, Version, Years, and user-defined dimensions and members, you can select a default alias table for the application. Users can set preferences for which set of aliases (stored in an alias table) to use for displaying member and dimension names.

To select the application's default alias table:

1. From the Home page, click **Application**, and then click **Settings**.
2. For **Alias Table**, select an alias table.
3. For **Display Member Label as**, select the option that enables the kind of member data to be displayed in the member selector throughout the application:
 - **Default**: The data determined by the form, grid, or dimension settings
 - **Member Name** : Just member names
 - **Alias**: Just member aliases, if defined
 - **Member Name:Alias**: Names followed by aliases, if defined
 - **Alias:Member Name**: Alias, if defined, followed by the names
4. Click **Save** or **Reset**.

Administering Dimensions

This section documents how to edit dimensions using the Classic Dimension Editor which is accessed by using the **Dimensions** link in the Navigator menu. In the 17.05 (May 2017) update, we released the Simplified Dimension Editor.

For detailed information about using the Simplified Dimension Editor, see [Editing Dimensions in the Simplified Dimension Editor](#).

Related Links

[About Dimensions](#)

[Working with Dimension Hierarchies](#)

[About Custom Dimensions, Entities, Accounts, Periods, and Cubes](#)

[Adding or Editing User-Defined Custom Dimensions](#)

[Working with Members](#)

[Working with Attributes](#)

[Working with Attribute Values](#)

[Customizing Calendars](#)

[Setting Up Currencies](#)

[Setting up Dynamic Time Series Members](#)

[Working with UDAs](#)

Working with Member Formulas

About Dimensions

Dimensions categorize data values.

Seven dimensions are included with the application: Account, Entity, Scenario, Version, Period, Years, and Currency. You can create up to 32 user-defined custom dimensions.

Members are components of dimensions.

For complete information about dimensions, see [Dimension Overview](#).

Working with Dimension Hierarchies


Related Topics

- [Filtering the Dimension View by Cube](#)
- [Sorting Members](#)
- [Viewing a Member's Ancestors](#)
- [Determining Where Members Are Used in an Application](#)

Filtering the Dimension View by Cube

You can filter the dimension view by cube. When you select a cube, only dimensions used in that cube are displayed on the **Dimensions** page.

To filter the dimension view by cube:


1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. For **Cube**, select the cube.

The application displays only the dimensions used in the selected cube.



Sorting Members

You can sort members in ascending or descending order, by children or descendants. Sorting members affects the outline.

To sort members:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select the dimension for the members.
3. On **Dimensions**, select the members whose children or descendants you want to sort.
4. For **Sort**, select children or descendants.



Sorting by children affects only members in the level immediately below the selected member. Sorting by descendants affects all descendants of the selected member.

5. Click  to sort by ascending order or  to sort by descending order.
6. Click **OK**.

The next time you create or refresh the database, the outline is generated with members in the order that is displayed.



Viewing a Member's Ancestors

To view a member's ancestors:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select a dimension.
3. Select the member in the dimension hierarchy.
4. Click .
5. Click **OK**.

Determining Where Members Are Used in an Application

To view where members are used in an application:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension whose member's usage you want to view.
3. Click .

About Custom Dimensions, Entities, Accounts, Periods, and Cubes

See the following topics for more information:

- [About Custom Dimensions](#)
- [About Entities](#)
- [About Accounts](#)
- [Accounts, Entities, Periods, and Cubes](#)

Adding or Editing User-Defined Custom Dimensions

User-defined custom dimensions must conform to guidelines listed in [Naming Restrictions](#).




Table 24-3 Properties for User-Defined Custom Dimensions

Property	Value
Dimension	Enter a name that is unique across all dimensions.
Alias	Optional: Select an alias table. Enter an alternate name for the dimension. See About Aliases .
Description	Optional: Enter a description.
Valid for Cubes	Select cubes for which the dimension is valid. Clearing this option makes all members of the dimension invalid for the deselected cube.

Table 24-3 (Cont.) Properties for User-Defined Custom Dimensions

Property	Value
Apply Security	Allow security to be set on the dimension members; must be selected before assigning access rights to dimension members. Otherwise, dimensions have no security and users can access members without restriction.
Data Storage	Select a data storage option. The default is Never Share .

To add or change user-defined dimensions:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Click  or select an existing dimension and click .
3. Specify any of the properties listed above.
4. Click **Save**.
5. Click **OK**.

Click **Refresh** to revert to the previous values and keep the page open.

- [Setting Dimension Properties](#)
- [Setting Dimension Density and Order](#)
- [Setting the Evaluation Order](#)

Setting Dimension Properties

Dimension properties must conform to guidelines listed in [Naming Restrictions](#).

Table 24-4 Dimensions Properties

Property	Value
Dimension	Enter a name that is unique across all dimensions.
Description	Optional: Enter a description.
Alias Table and Alias	Optional: Select an alias table. Enter an alternate name for the dimension. See Administering Alias Tables .
Valid for Cubes	Select cubes for which the dimension is valid. Clearing this option makes all members of the dimension invalid for the deselected cube.
Two Pass Calculation	Recalculate values of members based on values of parent members or other members. Available for Account and Entity members with Dynamic Calc or Dynamic Calc and Store properties.
Apply Security	Allow security to be set on the dimension members; must be selected before assigning access rights to dimension members. Otherwise, dimensions have no security and users can access members without restriction.
Data Storage	Select a data storage option. The default is Never Share .


Table 24-4 (Cont.) Dimensions Properties

Property	Value
Display Option	Set application default display options for the Member Selection dialog box. Select Member Name or Alias to display members or aliases. Member Name:Alias displays members on the left and aliases on the right. Alias:Member Name displays aliases on the left and members on the right.

Setting Dimension Density and Order

The **Performance Settings** tab enables you to set dimensions as sparse or dense and set their order of precedence.



To manage performance settings:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the **Performance Settings** tab.
3. For each dimension, set its **Density** as **Dense** or **Sparse**.

See [About Sparse and Dense Dimensions](#).

Note:

The **Density** column is hidden for applications that contain only ASO cubes. If an application contains a BSO cube or a BSO and an ASO cube, the **Density** column displays for both cubes.

4. Set the order of precedence by selecting a dimension and clicking  or  next to the **Position** column heading.


See [About Reordering Dimensions](#).





Setting the Evaluation Order

The **Evaluation Order** tab enables you to specify which data type prevails when a data intersection has conflicting data types.



For example, if Account members are set to the Currency data type, and Product members are set to the Smart List data type, you can set whether the Currency or Smart List data type prevails at an intersection.

To set evaluation order:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select **Evaluation Order**, and then select the cube.
3. From **Available Dimensions**, select dimensions and move them to **Selected Dimensions**:

-  moves selected dimensions
-  moves all dimensions
-  removes selected dimensions
-  removes all dimensions

You need select only dimensions whose members have specific data types (that is, their data type isn't "Unspecified"). The data type "Unspecified" doesn't conflict with another data type.

4. If you select multiple dimensions, set the order of precedence by clicking  or .
5. Click **Save**.




Working with Members

You can assign access rights to members, rearrange the dimension member hierarchy, share members of the Entity, Account, and user-defined custom dimensions, and enable creation of dynamic members "on-the-fly."

- [Finding Dimension Members](#)
- [About Assigning Access to Members](#)
- [Adding or Editing Members](#)
- [Deleting Members](#)
- [Deleting Parent Members](#)
- [Working with Shared Members](#)
- [Creating Shared Members](#)
- [About Dynamic Members](#)

Finding Dimension Members

To find dimension members in dimension hierarchies:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select the dimension for the member.
3. For **Search**, select **Name**, **Alias**, or **Both**.
4. Enter the search text (member name, alias, or partial string) for which to search.
5. Click  or .

About Assigning Access to Members

Service Administrators can assign permissions to members.

You can assign permissions to members by selecting the dimension property **Apply Security**. If you omit or clear the **Apply Security** setting, all users can access the dimension's members. By default, the Account, Entity, Scenario, and Version dimensions are enabled for access permissions. Optionally, you can enable this option for Period, Years, and Custom dimensions.

For complete information, see [Assigning Access to Dimension Members](#). To enable access to members, see [Editing Dimension Properties](#).

Adding or Editing Members

Members must conform to guidelines listed in [Naming Restrictions](#). Shared members must be consistent with [Working with Shared Members](#).

Table 24-5 Member Properties

Property	Value
Name	Enter a name that is unique across all dimension members.
Description	Optional: Enter a description.
Alias Table	Optional: Select the alias table to store the alias name. Enter an alternate name for the member in Alias . See Administering Alias Tables .
For Account members only: Account Type	Select Expense, Revenue, Asset, Liability, Equity, or Saved Assumption . For descriptions, see Account Types .
For Account members only: Variance Reporting	If the account type is Saved Assumption , select Expense or Non-Expense . Designate the saved assumption as a revenue, asset, liability, or equity account.
For Account members only: Time Balance	Select Flow, First, Balance, Average, Fill, Weighted Average - Actual_Actual, or Weighted Average - Actual_365 . For descriptions, see Time Balance Property .
For Account members only: Skip	If the account type is Asset, Equity, or Liability , select None, Missing, Zeros, or Missing and Zeros . For descriptions, see Setting Account Calculations for Zeros and Missing Values .
For Account members only: Exchange Rate Type	Select Average, Ending, or Historical . For descriptions, see Data Type and Exchange Rate Type .
For Account members only: Data Type	Select Currency, Non-currency, Percentage, Date, or Text . For descriptions, see Data Type and Exchange Rate Type .
For Account members only: Distribution	Sets the weekly distribution. Available for leaf Account members if the option was selected when creating the application and the base time period is 12 months.

Table 24-5 (Cont.) Member Properties



Property	Value
Hierarchy Type	Hierarchy Type is available for dimensions bound to an aggregate storage cube. Aggregate storage dimensions are automatically enabled to support multiple hierarchies. The first hierarchy in a multiple hierarchy dimension must be stored.
	<div style="border: 1px solid #0070C0; padding: 10px; background-color: #E6F2FF;"> <p> Note:</p> <p>For members with a stored hierarchy type, the only valid cube aggregation options are Addition or Ignore. In a stored hierarchy, the first member must be set to Addition. For members with a dynamic hierarchy type, all cube aggregation options are valid. Stored hierarchy members that are not children of Label Only members must have Addition set as the consolidation operator. Children of Label Only members can be set to Ignore.</p> </div>
Data Storage	Select a data storage property. The default is Never Share for new custom dimension members (except root members).
Two Pass Calculation	Recalculate values of members based on values of parent members or other members. Available for Account and Entity members with Dynamic Calc or Dynamic Calc and Store properties.
For Entity members only: Base Currency	For Standard multiple currency applications only, select the Entity member's base currency.

Table 24-5 (Cont.) Member Properties

Property	Value
Plan Type	Select the plan types (or cubes) for which the member is valid.

 **Note:**

A member can belong to both aggregate storage and block storage cubes.

Select an aggregation option for each selected cube. You can select a source cube only if multiple cubes are valid for the member. Only cubes and aggregation options for which the member's parent is valid are available. If the parent isn't valid for a cube or aggregation option, neither is the child member. Deselecting a cube for an account or entity parent member deselects it for all descendents of that parent. For members with a stored hierarchy type, the only valid aggregation options are Addition or Ignore. See [Aggregation Options](#).

 **Caution:**

Deselecting a cube for dimension members after data is entered into an application may result in loss of data when an application is refreshed. For account members, data is lost if the deselected cube is the source cube.

Members of a custom dimension and a Period dimension can set usage by cube, similar to the Account and Entity dimensions.

For Account members only:
Source Cube

Select the source cube for the member. A shared member is a pointer to the base member and isn't stored; this is disabled for shared members. The source cube of a shared Account member matches the source cube of the base member, even though Source Plan field is unavailable because it doesn't apply to shared members.

Smart Lists

Optional: Select a Smart List to associate with the member.

Enable for Dynamic Children

Enables users to create children for this member by entering a member name in the runtime prompt for a business rule that has been configured with a dynamic parent member (see [About Dynamic Members](#)).

Number of Possible Dynamic Children

This option is available if **Enable for Dynamic Children** is selected. Enter the maximum number of dynamically-added members that users can create. The default is 10.





Table 24-5 (Cont.) Member Properties

Property	Value
Access Granted to Member Creator	<p>This option is available if Enable for Dynamic Children is selected. Determines the access that member creators have to dynamic members that they create with a runtime prompt:</p> <ul style="list-style-type: none"> • Inherit: The member creator will inherit the closest parent's access to the newly-created member. • None: The member creator will not be assigned any access to the newly-created member. (A Service Administrator can later assign the member creator access to the members.) • Read: The member creator will be assigned Read access to the newly-created member. • Write: The member creator will be assigned Write access to the newly-created member.


 **Note:**

If a Service Administrator changes these settings, they affect only future dynamic members; they don't retroactively affect dynamic members.

To add or edit members:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension.
3. Perform one action:
 - To add a child member, select the parent level of the dimension hierarchy to which to add a member and click .
 - To add a sibling, select the level of the dimension hierarchy to which to add a sibling and click .
 - To edit a member, select that member from the dimension hierarchy and click .

 **Note:**

To add an All Years parent member that includes all members of the Years dimension, select the Years dimension and then click . The All Years parent member enables users to view the accumulated data across multiple years, for example, a project's total cost up to its end date. The All Years member doesn't include the No Year member, if one is defined for the application.

4. On **Member Properties**, set or change member properties described in [Table 1](#).
If you don't see the new member on the page, click **Next**.

5. Click **Save** to save information to the relational database and see changes in the dimension hierarchy.
6. Refresh the database so edited members are visible to users entering data.
7. After creating a dimension member, you typically complete these tasks:
 - Assign access. See [Assigning Access to Dimension Members](#).
 - Specify attributes.

Deleting Members



Each data value is identified by a set of dimension member values and a cube. Deleting dimension members or deselecting the cube results in data loss when refreshing an application. Deleting entity members deletes all approval units (including data) associated with them.

Before deleting members, understand where in the application they are used (in which forms, approval units, exchange rates, and so on) by using **Show Usage**. See [Determining Where Members Are Used in an Application](#).

You must delete the entity member throughout the application before deleting it from Dimensions. For example, if the entity member is used in a form, you must delete it from the form before deleting it from Dimensions.

When deleting a large subtree of entities, you can improve performance if you first exclude approval units for the subtree (by excluding the root member) for all scenarios and versions. See [Approvals Process](#).


To delete members:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension whose member you want to delete.
3. From the dimension hierarchy, select the entity member to delete.
4. Click  .
Deleting a base member also deletes its shared members.
5. Click **Yes**.
6. Update and validate business rules and reports.

Deleting Parent Members

Data values are identified by a set of dimension member values and a cube. Deleting dimension members or deselecting the cube results in data loss when refreshing the application.

To delete a parent member and all its descendants from the dimension hierarchy:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension whose member and descendants you want to delete.
3. Select the member whose branch to delete.

4. Click .
5. Click **Yes**.

Working with Shared Members

Sharing members allow alternate rollup structures within an application. A base member must exist before you can create a shared member. You can create multiple shared members for the base member. A base member must display before its shared members in position from top to bottom.

Shared members are available for Entity, Account, and user-defined custom dimensions. Shared member values can be ignored to avoid double-counting values when you roll up the outline.

Shared members share some property definitions with base members, such as member name, alias name, base currency, and cubes for which members are valid. Shared members must have unique parent members and different rollup aggregation settings. Custom attributes, custom attribute values, and member formulas are not allowed for shared members. Renaming base members renames all shared members.

Shared members can't be moved to another parent member. You must delete shared members and recreate them under different parent members. The base member need not be level zero. You can enter data in shared members, and values are stored with base members.

Shared members are displayed similarly to base members in the dimension hierarchy for member selection in Oracle Smart View for Office.

Creating Shared Members

You create shared members the same way as other members, with these differences:

- The base member can't be the parent of the shared member.
- You can't add a shared member as a sibling to the base member.
- You must give the shared member the same name as its base member. It can have a different description.
- You must select Shared as the Data Storage for the shared member.


About Dynamic Members

Dynamic members are members that users can create when working with business rules. They're sometimes referred to as "on the fly members." A Service Administrator enables end users to create dynamic members under a parent member and must refresh the database to create the required placeholders in Essbase. In business rules with runtime prompts, users can then create members by entering desired member names in the runtime prompts. Subsequent database refreshes will rename used dynamic children to the names specified by the end users and recreate the required placeholders in Essbase. For information about working with business rules and dynamic members, see *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud*.

If a parent member is enabled for adding dynamic children, users can create new members by entering their name in the runtime prompt.

Enabling Parent Members for Adding Dynamic Children

To enable a parent member for adding dynamic children:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Edit the parent member and select the option **Enable for Dynamic Children** (see [Adding or Editing Members](#)).
 - **Optional:** Set the member property **Number of Possible Dynamic Children** (the default is 10). This setting determines the number of placeholders that are created for dynamically adding or loading members under the parent. If all placeholders are used, subsequently added children are added as normal members and can't be used until the database is refreshed.
 - **Optional:** Set the member property **Access Granted to Member Creator** (the default is Inherit).
3. Refresh the database to create the placeholders for dynamic members in the databases for the cubes in which the members are used.
4. In Calculation Manager:
 - a. Create a business rule with a runtime prompt (of the Variable type Member). Under the **Dynamic Member Parent** column, use the **Member Selector** to select the parent member that you enabled for dynamic children in the application.
 - b. Select the option **Create dynamic members**.
 - c. Deploy the business rule.

For information about working with business rules, see *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud*.

 **Note:**

- In Calculation Manager, selecting both the **Create dynamic members** and the **Delete dynamic members** options enables temporary dynamic members to be created for calculations, and those temporary dynamic members will be deleted after the business rule completes.
- Selecting the **Delete dynamic members** option alone presents you with the **Member Selector** in the runtime prompt so you can delete any member that you created dynamically under the parent (if you have write access to that member). This enables you to have full control over cleaning up and managing the members under the parent. The key is proper design to fit your requirements, setting the appropriate access rights to dynamic children with the **Access Granted to Member Creator** member property.

Results

If all the above conditions are met, when users run the business rule with the runtime prompt, they enter the name of the dynamic member, and then click **Launch**. If the business rule runs successfully, the member is created in the dimension hierarchy under the dynamic member's parent.

Child members that you import under parent members enabled for dynamic children are added as dynamic child members if there are dynamic member placeholders in Essbase. After the placeholders are full, any remaining children are added as normal members, and can't be used until the database is refreshed.

 **Note:**

If you load a parent member that is enabled for dynamic children and its child members during the same import, the child members are loaded as normal members. This is because the database must be refreshed to create the placeholders in Essbase.

Considerations

When you create a dynamic member and data is captured against that member in multiple cubes (either through direct data entry, through calculations, data load, or data maps/Smart Push), then you must ensure that you clear the data from each of these areas before you remove the member using the **Delete dynamic members** operation. Performing the **Delete dynamic members** operation does not remove the data; the member is removed but the cube(s) will retain the data without the member showing up in the interface, and any rollup on the cube will reflect incorrect totals.

Working with Attributes

Use attributes to group members using the same criterion. You can assign attributes to sparse dimensions only. You can't assign attributes to label-only members. Attribute dimensions don't have aggregation properties because parents are dynamically calculated.


The Account dimension is usually defined as dense, so you can't assign attributes to it unless it's changed to sparse for all cubes. If you change a dimension from sparse to dense, all attributes and attribute values for that dimension are automatically deleted.

Attributes can have data types of text, date, Boolean, and numeric, as described in [Understanding Attribute Data Types](#). Attribute names must conform to guidelines listed in [Naming Restrictions](#). When attributes are defined, you can use the **Member Selection** dialog box to select attribute functions, such as **Equal** and **GreaterOrEqual**.

 **Note:**

This topic documents how to work with attributes using the Classic Dimension Editor. For information about using the Simplified Dimension Editor to work with attributes, see [Working with Attributes](#).

To create and change attributes, attribute values, and aliases:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select a sparse dimension for which to define an attribute, attribute value, or alias.

 **Note:**


Only sparse dimensions can contain attributes.

3. Click .

 **Note:**

If the dimension isn't sparse, **Custom Attributes** isn't available.



4. Select options.

- To create attributes, click . Type an attribute name, and select a data type: **Text**, **Date**, **Boolean**, or **Numeric**.

 **Note:**

- You can't modify the type after the attribute is created.
- Before working with date attributes, you must select the **Attribute Dimension Date Format** in **Application Settings** and save it.

See [Understanding Attribute Data Types](#).

- To modify attributes, click , and update the attribute name.
 - To set aliases for attributes, select an attribute and an attribute value, click . Select an alias table, type an alias name, and click **Save**.
5. Click **Close**.

When you click **Close**, the hierarchy is validated and an error displays if issues are detected. For example, date attribute values must be entered in the correct format, and numeric and date attribute dimensions must have at least one attribute value defined.

6. Update and validate business rules and reports.


Related topics:

- [Understanding Attribute Data Types](#)
- [Deleting Attributes](#)

 **Note:**

Instead of explicitly filtering by an attribute (like Red, for instance), you can create a user variable for the attribute dimension, and then use the user variable as the filter. Then you can enable the user variable as a dynamic user variable which would allow users to change the value of the filter at runtime. This is a useful technique that allows for dynamic filtering. See [Managing User Variables](#).

Table 24-6 Tutorials

Your Goal	Learn How
Learn how to report on data with attribute hierarchies. You can view and report on data organized by attribute on the web on forms and dashboards, with MR reports, or in Oracle Smart View for Office with ad hoc analysis.	 Reporting on Data with Attribute Hierarchies

Understanding Attribute Data Types

Attribute dimensions can have a data type of text, numeric, Boolean, or date that enables different functions for grouping, selecting, or calculating data. The attribute type applies only to level 0 members of the attribute dimension.

- Text attributes enable basic attribute member selection and attribute comparisons in calculations. When you perform such comparisons, characters are compared. For example, a package type Bottle is less than a package type Can because B precedes C in the alphabet.
- Numeric attribute dimensions use numeric values for the names of level 0 members. You can include the names (values) of numeric attribute dimension members in calculations. For example, you can use the number of ounces specified in an Ounces attribute to calculate profit per ounce for each product. You can also associate numeric attributes with ranges of base dimension values, for example, to analyze product sales by market population groupings.
- Boolean attribute dimensions in a database contain only two members. When a Boolean attribute dimension is added in the business process, two attribute values, True and False, are created for this attribute dimension by default. A base dimension, such as Account or Entity, can be associated with only one attribute dimension that has the Boolean data type.
- Date attributes can specify the date format as month-day-year or day-month-year, and sequence information accordingly. You can use date attributes in calculations, for example, comparing dates in a calculation that selects product sales since 12-22-1998. Users can set the date format by selecting an option in **Attribute Dimension Date Format** in **Application Settings**.

Caution:

Before you can work with date attributes, you must toggle the **Attribute Dimension Date Format** selection in **Application Settings** and save it. From the Home page, click **Application**, and then click **Settings**. In **Attribute Dimension Date Format**, select a date format (**MM-dd-yyyy** or **dd-MM-yyyy**), and then click **Save**. After you select and save the date format, you must manually change any existing attribute date values to the supported format. If any date attributes in your application use an unsupported format, the system will provide you with a list of dimension attribute values that you will need to fix.

Also, if the **Attribute Dimension Date Format** setting is changed in the application settings, you must change any date attributes in the original format to the new format before you can add or save a new attribute.

Deleting Attributes




When you delete an attribute, all attribute values associated with the attribute are also deleted. Attribute values are removed from members to which they had been assigned, and the attribute is removed from dimensions to which it was assigned.

Note:

This topic documents how to delete attributes using the Classic Dimension Editor which is accessed by using the **Dimensions** link in the Navigator menu. In a previous update, we released the Simplified Dimension Editor.

For information about using the Simplified Dimension Editor to delete attributes, see [Deleting Attributes](#).

To delete attributes:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the sparse dimension for which to delete an attribute, and click .
3. Select the attribute to delete.
4. Above the **Attributes** column, click .
5. Click **OK**.
6. Update and validate business rules and reports.

Working with Attribute Values

Attribute values provide users with another way of selecting dimensions members when using forms. Data values for attribute values are dynamically calculated but not stored.

Note:






This topic documents how to work with attribute values using the Classic Dimension Editor. For information about using the Simplified Dimension Editor to work with attribute values, see [Working with Attribute Values](#).

- [Creating Attribute Values](#)
- [Assigning Attribute Values to Members](#)
- [Editing and Deleting Attribute Values](#)

Creating Attribute Values

You can define attribute values for sparse dimensions, which are typically the Entity and user-defined custom dimensions. After you define an attribute value for a dimension, you can assign it to members of that dimension.







To create attribute values:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the sparse dimension for which to create an attribute value.
3. Select the top level in the dimension hierarchy.
4. Click .
5. On the **Manage Attributes and Values** page, select the attribute for which to specify a value.
6. Above the **Attribute Values** column, click . If the options are available, you can click  or .
7. Enter a name and choose a data type.
8. Click **Save**.

Assigning Attribute Values to Members

You can assign attribute values members of a dimension that are defined as sparse for all cubes. Attribute values must be assigned to the same-level sparse dimension members. Otherwise, errors display during refresh.

To assign attribute values to members:





1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the sparse dimension for whose member you want to assign an attribute value.
3. In the **Dimension** hierarchy, select a member to which to assign an attribute value.
4. Click .
5. For members assigned attribute values, click  to change a member's attribute value.
6. Select attribute values to assign to the member.
7. Perform an action:
 - To assign the value to the selected member, click .
 - To remove a value from the selected member, select the value to remove and click .
 - To remove all values from the selected member, click .
8. Click **Save**.

Editing and Deleting Attribute Values

Note:

When you delete an attribute value, it's removed from custom dimension members to which it's assigned.

To edit or delete attribute values:

1. From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
2. Select the sparse dimension containing the attribute value you want to modify or delete.
3. Select the top level in the dimension hierarchy.
4. Click .
5. For **Attributes**, select the attribute containing the value to modify or delete, and then select the attribute value.
6. Above **Attribute Values**, click  or .
7. If editing, enter a name. If deleting, confirm the deletion.
8. Click **Save**.
9. Update and validate business rules and reports.

Customizing Calendars

Use the Period dimension to work with the yearly calendar rollup structure. When creating the application, the Service Administrator specifies the base time periods that span the application database. Use the Years dimension to add years to the calendar.

Related Topics

- [Defining How Calendars Roll Up](#)
- [Creating and Editing Summary Time Periods](#)
- [Deleting Summary Time Periods](#)
- [Working with the Years Dimension](#)
- [Adding Years to the Calendar](#)
- [Editing Year Information](#)
- [Renaming Time Periods](#)
- [Assigning Aliases to Summary Time Periods](#)
- [Editing the BegBalance Member](#)

Defining How Calendars Roll Up

Table 24-7 Calendar Roll Up

Base Time Period	Roll Up
12 Months	Four quarters are created per year. Months roll up into parent quarters and quarters roll up into years.
Quarters	Quarters roll up into years.
Custom	No default rollup structures. A flat list of the custom base time periods displays.





After the application calendar is created, you can't change the base time period or reduce the number of years in the calendar. Service Administrators can change the names, descriptions, aliases, and ranges of the summary time periods in the hierarchy.

Creating and Editing Summary Time Periods

You can change such aspects as name, description, alias, starting period, and ending period. However, you can't change the order of base time periods or skip base time periods. The range can't extend beyond the current fiscal year.

You must work from the top of the hierarchy to the bottom when creating summary time periods. (Otherwise, the application views the rollup structure as asymmetrical and you can't continue.) The summary time period displays in the hierarchy as a parent of the selected item. To enforce a balanced hierarchy, all base members must be the same number of levels from the root.

To create or edit summary time periods:

- From the Home page, click **Navigator** , and then under **Create and Manage**, click **Dimensions**.
- For **Dimension**, select **Period**.
- Perform one action:
 - To add a time period, select the time period in the dimension hierarchy to which you want to add a child or sibling, and then click  or .
 - To edit a time period, select the time period and click .
- For **Name**, enter or change the name for the summary time period.
- Optional:** For **Description**, enter a description.
- Optional:** For **Alias Table** and **Alias**, select an alias table to use. Enter an alias name. The default table is used if you don't select one.
- For **Start Period**, select the starting period.

The range can't extend beyond the current fiscal year. For summary time periods, **Start Period** displays the first child, or all children except the first child of the sibling above it.
- For **End Period**, select the ending period.

For summary time periods, **End Period** displays the last child, or all children from the Start Period through the next sibling's children, except the last child.



- Click **Save**.

Deleting Summary Time Periods

When you remove a summary time period from the hierarchy, its children are moved into another summary time period:

- If you delete the first summary time period, children are moved into the next sibling of the summary time period.
- If you delete the last summary time period, children are moved into the previous sibling of the summary time period.
- If you delete a summary time period from the middle of a hierarchy, children are moved into the previous sibling of the summary time period.

To delete summary time periods:

- Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
- For **Dimension**, select **Period**.
- In the dimension hierarchy, select the summary time period to delete.
You can't delete base time periods.
- Click .
- Click **OK**.

Working with the Years Dimension

Use the Years dimension to work with calendar years.



Table 24-8 Years Tasks

Task	See Topic
<ul style="list-style-type: none"> Add years before the Start year or after the End year of the calendar. Add an All Years parent member that includes all members of the Years dimension (except No Year, if that member exists). 	Adding Members
Add or update the description and alias for a year.	Editing Members

Adding Years to the Calendar

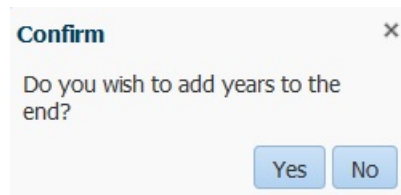
You can add years to the beginning or end of the calendar, but you can't reduce the number of calendar years without creating a database.

To add years to the calendar:

- Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
- For **Dimension**, select **Years**.
- Click .
- In **Add Years**, enter the number of years to add to the calendar.


5. Click **OK**.

The confirmation dialog asks you to confirm the following:



- To add years after the End year, click **Yes**.
- To add years before the Start year, click **No**.



Note:

To add an All Years parent member that includes all members of the Years dimension, click . The All Years parent member enables users to view the accumulated data across multiple years, for example, a project's total cost up to its end date. (This parent member doesn't include the No Year member, if one exists.)

Editing Year Information

You can add or update the description and alias for a member of the Years dimension.



To edit a member of the Years dimension:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select **Years**.
3. Select the year you want to edit, and then click .
4. Update the information for that year, and then click **Save**.

Renaming Time Periods

You can rename root-level, base time periods, and user-defined summary time periods.



To rename time periods:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select **Period**.
3. Select the time period you want to rename, and then click .
4. Rename the time period, and then click **Save**.

Assigning Aliases to Summary Time Periods

You can assign and change aliases to base time periods and summary time periods.



To assign or change the alias:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select **Period**.
3. Select the summary time period.
4. Click .
5. For **Alias Table**, select the alias table to use.
6. For **Alias**, enter an alias name.
7. Click **Save**.

Editing the BegBalance Member

You can edit the BegBalance member of the Period dimension. As the first time period in the application, the BegBalance member is useful for entering beginning data when you start a new application, fiscal year, or calendar year. You can rename and describe BegBalance and give it an alias.

To edit the BegBalance member:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. For **Dimension**, select **Period**.
3. Select the first member, **BegBalance**.
4. Click .
5. For **Edit Period**:
 - Enter a name.
 - Enter a description.
 - Select an alias table to use for the BegBalance member, and enter an alias.
6. Click **Save**.

Setting Up Currencies

You can plan, forecast, and analyze financial information in one or more currencies. You can create, edit, and delete currencies. Service Administrators control:

- Which currencies an application uses, including for reporting
- How currencies display in reports and forms
- How currencies convert to other currencies
- For Standard multiple currency applications, whether a triangulation currency converts currencies
- When currency conversions occur

Enabling Multiple Currencies

In a Standard multiple currency application only, you can enable multiple currencies per entity on forms. See [Defining the Layout](#).

When selecting business rules for forms, you can select the Calculate Currencies business rule to convert values among the available currencies. See [Adding and Removing Rules in Forms](#).

- [Working with Currencies in a Standard Multicurrency Application](#)
- [About the Calculate Currencies Business Rule](#)
- [Exchange Rate Types](#)
- [Scaling](#)
- [Number Formatting](#)
- [Reporting Currencies for Standard Multicurrency Applications](#)
- [Checking How Currencies are Used](#)
- [Creating Currencies](#)
- [Editing Currencies](#)
- [Deleting Currencies](#)

Base Currency

For a Standard multiple currency application, specify each entity member's base currency. The default base currency for entity members is the currency specified when creating the application. For example, if U.S. Dollars is the default currency, you may specify Yen as the base currency for the Japan entity and U.S. Dollars for the United States entity. When using forms having values for the Japan entity, if the display currency is set to U.S. Dollars, values are converted to U.S. Dollars using the rates in the exchange rate table (assuming Yen is the local currency and U.S. Dollars is the reporting currency).

 **Note:**

If the Simplified multiple currency option was selected during application creation, you don't need to specify a base currency for entity members. See [About Simplified Multicurrency](#).

Working with Currencies in a Standard Multicurrency Application

 **Note:**

This topic assumes the Standard multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see [About Simplified Multicurrency](#).

If multiple currencies are enabled, users can see values converted from the local currency to a reporting currency and can override a cell's base currency.

 **Note:**

- When the local currency is selected on forms, the default stored and displayed currency for cells is the entity's base currency (which you specify). Users can enter data values only into local currency members. If the local currency member is selected, all currencies specified for the application are available as input types.
- You can set dimension properties for each currency in the **Edit Currency** dialog box. In preferences, users can select different display options, and can select Currency Setting to apply the properties set by the Service Administrator.
- Currencies can be converted only to reporting currencies. Users can't enter data into cells displayed in reporting currencies. The application's main currency is by default a reporting currency. You can change which currencies are reporting currencies.
- Currencies defined for the application are valid currencies for data entry. Valid currencies for data entry are displayed in a list that users access by clicking the Currency link during data entry.
- To get meaningful results, roll up values in one common reporting currency. If members of a subtotal have mixed currencies, the currency type is blank and the currency symbol doesn't display. For example, adding 10 US dollars and 10 Japanese yen to a value of 20 makes no sense.
- An application with 500 time periods can successfully run currency conversion calculation scripts only if the time periods have default names, TP 1 through 500. Otherwise, the conversion calculation script you try to create exceeds the 64K limit.
- User-defined currency conversion calculation scripts created when a database is created or refreshed may be available in Oracle Smart View for Office, depending on user access. When using user-defined currency conversion calculation scripts, Oracle recommends changing the order so the currency conversion calculation script is first, before Calculate Form.
- Currency codes associated with input values are stored as numeric values. These codes are calculated in dimension formulas, calculation scripts, and business rules. The calculated values of these currency codes may translate to currency codes that are incorrect or invalid. Where there are children with mixed currencies, review calculated results on the upper levels.
- If a parent has multiple children, of whom only one child has an overridden currency, the parent inherits the overridden currency code (which isn't displayed on forms).
- In certain cases, parent entities display #MISSING when trying to convert to a selected currency. Ensure that a currency rate is entered for each combination of local currencies and selected currencies on forms or reports. Currency combinations must exist for all mixed-currency children entities and parent members.
- Input of multiple currencies to one entity isn't supported in Smart View. If worksheets include mixed currency types, users could inadvertently enter values in the wrong currency.

About the Calculate Currencies Business Rule

 **Note:**

This topic assumes the Standard multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see About Simplified Multicurrency.

The Calculate Currencies business rule is based on the dimensions and members on the form. It converts data from the local currency to the reporting currency specified on the form, applying the exchange rate conversions. It:

- Doesn't calculate subtotals. To subtotal values, run the Calculate Form business rule (or a customized business rule that includes aggregation) after converting currencies.
- Ignores #MISSING values.
- Can be turned on or off by associating or disassociating it with forms during form design.
- Is set by default to not run when saving data.

Exchange Rate Types

Exchange Rate Types for Standard Multicurrency Applications

For Standard multiple currency applications, these are the exchange rate types that are associated with currencies: Historical, Average, and Ending.

The exchange rate type for each account is specified in the **Member Property** dialog box. For average and ending rate types, enter values for all time periods. For historical rate types, enter one rate value that is used for all time periods, including the Beginning Balance period. For the Beginning Balance period, enter one rate value used for that time period for average and ending rate types.

A Standard multiple currency application supports currency conversion by triangulation through a triangulation currency.

Exchange Rate Types for Simplified Multicurrency Applications

For Simplified multiple currency applications, these are the exchange rate types that are associated with currencies: **FX Rates-Average** and **FX Rates-Ending**. See About Simplified Multicurrency.

Scaling

You can specify scaling data values when displayed in certain currencies. For example, you can set the scaling for Yen to Thousands, then enter 10,000 as a value for the Japan entity on a form with the Local member selected for the Currency dimension. When you select Yen as the currency member for the form, the scaling is applied and 10 displays as the value for Japan.

Number Formatting

You can determine the initial display of numerical values for non-currency and currency data types in forms:

- Thousands separator:
 - None: 1000
 - Comma: 1,000
 - Dot: 1.000
 - Space: 1 000
- Decimal separator:
 - Dot: 1000.00
 - Comma: 1000,00
- Negative number sign:
 - Prefixed minus: -1000
 - Suffixed minus: 1000-
 - Parentheses: (1000)
- Negative number color:
 - Black
 - Red

Reporting Currencies for Standard Multicurrency Applications



Note:

This topic assumes the Standard multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see About Simplified Multicurrency.

A reporting currency is the currency in which your company prepares financial statements. The application supports currency conversion from local currencies to one or more reporting currencies. Converted reporting currency values are stored and read-only for all users. An application's default currency is the default reporting currency. You can disable a currency as a reporting currency.

Checking How Currencies are Used

You can view how an application uses currency: whether a currency is the default, is used for triangulation currency or by an entity (for Standard multicurrency applications), or has a conversion or exchange relationship with other currencies.

To see how currencies are used:


1. From the Home page, click **Application**, and then click **Overview**.
2. Click the **Dimensions** tab, and then select the Currency dimension.
3. Select the currency for which you want information.
4. Click **Actions**, and then click **Show Usage**.

Creating Currencies

Select from a predefined list or create your own. You can specify:

- The three-letter code
- The symbol
- A description of up to 256 characters
- The scaling factor to use when values are displayed
- For Standard multicurrency applications, the triangulation currency to use for currency conversion
- The alias table to use to display aliases
- Number formatting, including thousands separator, decimal separator, negative sign, and color
- Whether it's a reporting currency



To create currencies:

1. From the Home page, click **Application**, and then click **Overview**.
 2. Click the **Dimensions** tab, and then select the Currency dimension.
 3. Create a currency:
 - To add a predefined currency, click **Actions**, then click **Add Standard Currency**, select from a list of standard currencies, and then click **OK**.
 - To create a currency, click **Actions**, then click **Add Currency** and specify properties:
 - For **Member Name**, enter an abbreviation or identifier of up to three characters.
 - **Optional:** For **Description**, enter a name, such as Japanese yen.
- 
- Note:**
- To view all property columns in the grid, including the **Description** column, right-click any heading on the grid and scroll down until you see the **Default mode** check box. Clear the **Default mode** check box to view all the property columns in the grid.
- For **Symbol**, enter a symbol, or select a symbol from the **Predefined Symbol** column.
 - **Optional:** For **Scale**, select how to enter and display the currency. For example, 3 yen represents 3000 yen if scaling is set to thousands.
 - **Optional:** For **Triangulation Currency** (for Standard multicurrency applications), select the currency to use as the common third currency for conversion.
 - **Optional:** For **Alias Table**, select the alias table to use.
 - **Optional:** For **Alias**, enter a name for the currency alias.
4. **Optional:** Select **Reporting Currency** (see [Working with Currencies in a Standard Multicurrency Application](#)).
 5. **Optional:** For **Thousands Separator**, select how to display the thousands separator (it must differ from the decimal separator).

6. **Optional:** For **Decimal Separator**, select how to display numbers with decimal values (it must differ from the thousands separator).
7. **Optional:** For **Negative Sign**, select how to display negative numbers:
 - **Prefixed minus:** -1000
 - **Suffixed minus:** 1000-
 - **Parentheses:** (1000)
8. **Optional:** For **Negative Color**, select the display color.
9. **Optional:** Select the type of **Data Storage**.
10. **Optional:** Select **Two Pass Calculation**.
11. **Optional:** Select the **Data Type**.
12. **Optional:** Select a **Smart List**.
13. Click **Save**.

Editing Currencies

To edit currencies:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. From **Dimension**, select **Currency**.
3. Select the currency to edit.
4. Click .
5. Click the **Currency** tab.
6. Modify properties:
 - To select from the predefined symbols, select one from the **Select from Predefined Symbols** drop-down list.
 - To change the currency's symbol, for **Symbol**, enter or select the symbol.
 - For **Scale**, set how to enter and display the currency.
 - For set currency precision (the number of digits to the right of the decimal place), select a number from 1 to 10 from the **Precision** drop-down list.

None is the default.

Note:

Service Administrators can override this setting for forms. See [Setting Form Precision and Other Options](#).



- To specify the currency as a reporting currency, select **Reporting Currency**. See [Working with Currencies in a Standard Multicurrency Application](#).
- For **Thousands Separator**, select how to display the thousands separator (it must differ from the decimal separator).
- For **Decimal Separator**, select how to display numbers with decimal values (it must differ from the thousands separator).

- For **Negative Sign**, select how to display negative numbers:
 - **Prefixed Minus**: -1000
 - **Suffixed Minus**: 1000-
 - **Parentheses**: (1000)
 - **Use Default Setting**: Apply the display setting for the currency (see [Creating Currencies](#)).
 - For **Negative Color**, select the display color.
7. Click **Save**.

Deleting Currencies


You can't delete the default currency.

To delete currencies:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. From **Dimension**, select **Currency**.
3. Select the currency to delete.
4. For multiple currency applications, click  to determine if the currency is the default currency. If a Standard multicurrency application is used, determine if the currency is a triangulation currency, or if the currency is associated with an entity. You can't delete a currency that meets these criteria.

Note:

For Standard multiple currency applications, if you delete a currency defined in the exchange rate table, it's deleted from the table.

5. Click **Close**.
6. Click , and then click **OK**.
7. Update and validate business rules and reports.

Specifying Exchange Rates

Note:

This topic assumes the multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see [About Simplified Multicurrency](#).

Use exchange rates to convert values from one currency to another. You can:

- Enable budget preparers in various countries to create plans in other currencies
- Show summary report data in a currency

- Summarize values from multiple currencies into one currency

For example, you might specify yen as the base currency for the Japan entity and US dollars for the United States entity. When you display a form having values for the Japan entity and the form's display currency is set to US dollars, the exchange rates for the yen is used to convert the values for Japan to US dollars. If the display currency is set to yen, the exchange rates for US dollars converts values for the United States entity to yen.

To specify exchange rates, you must set up multiple currencies when creating an application.

- [About Exchange Rate Tables for Standard Multicurrency Applications](#)
- [Hsp_Rates Dimension for Standard Multicurrency Applications](#)
- [Triangulation](#)
- [Calculation Method](#)

About Exchange Rate Tables for Standard Multicurrency Applications

Note:

This topic assumes the Standard multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see [About Simplified Multicurrency](#).

Each application has a default currency specified when the application is created. When you specify exchange rate tables, only the default currency and triangulation currencies are available as destination currencies. You can enter exchange rates from source currencies to default or triangulation currencies.

You can create multiple exchange rate tables. Each table is typically associated with multiple scenarios, but each scenario can be associated with only one exchange rate table. When creating scenarios, select the exchange rate table for converting currencies.

Enter conversion values between the default currency and currencies defined in the Exchange Rates page. Exchange rate tables span all application time periods, so you can apply exchange rates to all scenarios. When creating or modifying exchange rate tables, you must refresh the application to store them in the cubes. See [Refreshing Application Databases](#).

Hsp_Rates Dimension for Standard Multicurrency Applications

Note:

This topic assumes the Standard multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see [About Simplified Multicurrency](#).

A Standard multiple currency application includes the Hsp_Rates dimension for storing exchange rates. It includes these members and others that store currency rates:

- Hsp_InputValue: Stores data values
- Hsp_InputCurrency: Stores currency types for data values

When generating reports or loading data, refer to the Hsp_InputValue member. When loading data, you must load data against the local currency. You need not refer to the Hsp_InputCurrency member.

By default, the Hsp_Rates dimension is set to Sparse. You can change this (see [Setting Dimension Density and Order](#)).

Triangulation

Note:

This topic assumes the multiple currency option was selected during application creation. If the Simplified multiple currency option was selected, see [About Simplified Multicurrency](#).

A multiple currency application supports currency conversion by triangulation through an interim currency called the triangulation currency. If you modify a currency's triangulation currency, you must re-enter exchange rates for the triangulation currency property and refresh the application to transfer and store the exchange rates. You can't select the application's default currency as a triangulation currency.

Calculation Method

When you input exchange rates for converting between currencies, you can select Multiply or Divide as the calculation method. For example, if you select 1.5 as the rate for converting British Pounds to US dollars, and select multiply as the calculation method, 1 British Pound is converted to 1.5 US dollars.

Setting up Dynamic Time Series Members

You can use Dynamic Time Series members to create reports that show period-to-date data, such as quarter-to-date expenses. Dynamic Time Series members are created automatically during application creation, and can be used with members of the Period dimension. To set up Dynamic Time Series, you enable a predefined Dynamic Time Series member and associate it with a generation number (and, optionally, an alias table and alias name). For example, to calculate quarter-to-date values, you can enable the Q-T-D (quarter-to-date) member and associate it with generation number 2. You can then use the Q-T-D Dynamic Time Series member to calculate monthly values up to the current month in the quarter.

Note:



Dynamic Time Series isn't supported for the Period dimension in an aggregate storage application.


The Dynamic Time Series members provide up to eight levels of period-to-date reporting. Your data and database outline determine which members you can use. For example, if the database contains hourly, daily, weekly, monthly, quarterly, and yearly data, you can report D-T-D (day-to date), W-T-D (week-to-date), M-T-D (month-to-date), Q-T-D, and Y-T-D information. If the database contains monthly data for the past 5 years, you can report Y-T-D and H-T-D

(history-to-date) information, up to a specific year. If the database tracks data for seasonal time periods, you can report P-T-D or S-T-D (season-to-date) information.

Oracle recommends that you avoid assigning time balance properties (such as First and Average) to members set for dynamic calculations if you plan to use the members in Dynamic Time Series calculations. Doing so may retrieve incorrect values for parent members in your accounts dimension.

To set up Dynamic Time Series members:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. Select the Period dimension, and then click .
3. Select **Enabled** for the DTS series to use:
 - Y-T-D: Year-to-date
 - H-T-D: History-to-date
 - S-T-D: Season-to-date
 - Q-T-D: Quarter-to-date
 - P-T-D: Period-to-date
 - M-T-D: Month-to-date
 - W-T-D: Week-to-date
 - D-T-D: Day-to-date
4. Select a generation.

The number of generations displayed depends on the number of generations in the time dimension. You can't associate Dynamic Time Series members with the highest generation (the dimension root).
5. **Optional:** Add an alias name. In the **Edit Alias Name** column, click , enter an alias name, and then click **OK**.
6. Click **Save**.


Additional Supported Application Features

Additional features are supported for application dimensions. You can add children and siblings to Scenario, Version, and Period dimensions, and you can use the cut, paste, expand, and collapse features to work with their dimension hierarchies (see [Working with Dimension Hierarchies](#)). You can also use shared members for these dimensions, and can set two pass calculations at the root level for all dimensions. For example, you can:

Table 24-9 Features

Feature	More Information
In Scenario and Version dimensions, create hierarchies and use shared members. If you assign children to bottom-up versions, these versions display as read-only parents on forms.	See Setting Up Scenarios and Specifying Versions .

Table 24-9 (Cont.) Features

Feature	More Information
<p>In the Period dimension, create alternate hierarchies and use shared descendants. Data Storage for all time periods can be set to any valid Data Storage value. The Consolidation operator for all time periods, including BegBalance, can be set to any valid consolidation operator. For example, it can be set to + instead of ~ (ignore).</p>	<p>See Working with the Years Dimension and Editing the BegBalance Member.</p>
<p>Turn on two pass calculation at the root level, for example, for Account.</p>	<p>See Adding or Editing Members.</p>
<div style="border-left: 2px solid #ccc; border-right: 2px solid #ccc; padding: 10px;"> <p> Caution:</p> <p>Two pass calculation is ignored on any non-Account member not set to Dynamic Calc. When using this setting, consider the impact on currency conversion scripts.</p> </div>	
<p>For attributes, create hierarchies and assign aliases.</p>	<p>See Working with Attributes.</p>

 **Note:**

For multicurrency applications, the pre-built currency conversion calculation script doesn't function properly if you change data storage to dynamic for any Scenario, Version, Period, or Years member, or for certain dimension roots (such as Entity, Version, Currency, and custom dimensions). When changing data storage, consider the impact on currency conversion scripts.

Considerations for Alternate Hierarchies in Period Dimensions

If you create an alternate hierarchy in the Period dimension, the alternate hierarchy must follow the YearTotal member in the outline.

Working with UDAs




You can use user-defined attributes (UDAs), descriptive words or phrases, within calc scripts, member formulas, reports, and forms. UDAs return lists of members associated with the UDA. For example:

- You can use the `HSP_UDF` UDA to prevent a formula from being overwritten when the application is refreshed. You must log on to each database associated with the business process and create the member formula with a UDA. The syntax for this UDA is: `(UDAs: HSP_UDF)`.
- If you use the `@XREF` function to look up a data value in another database to calculate a value from the current database, you can add the `HSP_NOLINK` UDA to members to prevent the `@XREF` function from being created on all cubes that are not the source cube selected for that member.

- For a Product dimension with several product members, you can create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy. Then you can base certain calculations on the designation New Products.
- For the budget review process, rather than creating a data validation rule for each owner in a product line (some product lines can have hundreds of owners), you can create a UDA containing the user names that apply to members using the approval unit hierarchy. Then in the data validation rule, you can enter a lookup function which will return the user names stored in the UDA for the current member. For example, create a UDA for each user in the promotional path and assign a prefix to the UDA name (for example, ProdMgr:Kim).
- When designing forms, you can use a UDA to select members for forms based on a common attribute. When you create forms with UDAs, any members that are assigned to the UDA are dynamically added to the form. For example, if you create a UDA called New Products and assign this UDA to the new products in the Product dimension hierarchy, the form will automatically display the new products at runtime. When selected in the form designer, a UDA is preceded by UDA; for example, UDA(New Products).

UDAs are specific to dimensions. For example, creating a UDA for an Account member makes it available for non-shared Account members. Deleting it removes it for all Account members. To make UDAs available for multiple dimensions, create the same UDA for multiple dimensions. For example, create a UDA named New for Account and Entity dimensions to make the UDA named New available for Account and Entity members.



To work with UDAs:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension for whose members to associate the UDA.
3. From the dimension hierarchy, select a member and click .
4. Select **UDA**.
5. Select a task:
 - To create a UDA, click , enter a name, and then click **Save**.

 **Note:**


Use no more than 60 characters when naming UDAs.

If creating a UDA for approvals, assign a prefix to the beginning of the name (for example, ProdMgr:Name). A prefix indicates that the UDA contains a user name and enables the data validation rule to look up the user. Use the same prefix for all approvals UDAs.

- To modify a UDA, click , change the name, and then click **Save**.
- To delete a UDA, select the UDA, click , and then confirm deletion.

 **Note:**

Deleting the UDA removes it for the whole dimension. If you delete UDAs, you must update all member formulas, calc scripts, and reports that reference them.


- To clear UDA selections, click .
6. To add or remove UDAs for the member, use the arrows to move UDAs to and from the **Selected UDA** panel.
 7. Click **Save**.

Working with Member Formulas

You can define member formulas to combine operators, calculation functions, dimension and member names, and numeric constants to perform calculations on members. Member formulas can also include:

- Operator type, function, value, member name, UDA, and so on allowed in formulas.
- Predefined formula expressions, including Smart List values, that expand into a formula or value upon database refresh.

To define member formulas:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension for whose member to add or change a formula.
3. Select the member and click **Edit**.
4. Select the **Member Formula** tab.
5. Select options for the following fields:
 - **Cube**

 **Note:**

With the exception of Account formulas, a formula entered for the default cube will be applied to all cubes unless it's overridden by a different formula entered for a specific cube.

Also, a default formula on Account members will only be transferred to Oracle Essbase for the source cube and not for any of the other cubes. A default formula won't be transferred to any aggregate storage cubes.

- **Data Storage:** Select a data storage option. The default is **Store**.

 **Note:**

The cube specific data storage field will not display the **Shared** or **Label Only** options. This is because a member can't be set to Shared or Label Only in one cube and not another.

- **Solve Order:** Specifies the order in which formulas are evaluated. Enter a whole number between 0 and 100000 (or use arrows to increase or decrease the number). The formulas for members that have a specified solve order are calculated in order from the lowest solve order to the highest. The default is 0.

 **Note:**

Solve order is available for aggregate storage cubes and also for block storage cubes that are enabled for Hybrid. Solve order for block storage cubes is only editable using the Simplified dimension editor. See [Accessing Edit Member Properties](#).

6. In the text box, define formulas for the member.
7. **Optional:** To check the validity of the member formula, click **Validate**.
8. Click **Save**.
Before you click **Save**, clicking **Reset** restores the previous member formula information.

Viewing Details of Formula Validation

To view details of the member formula validation:


1. On **Member Formula**, click **Validate**.
2. Click **Save**.

Working with Formula Expressions

In the text box on the **Member Formula** tab, you can include predefined formula expressions in member formulas, and test them with the **Validate** button. You can also load them.

You can update the dimension outline without updating the business rules and calc scripts that depend on the outline. Calculations become more independent of specifics in the outline. You can use Smart Lists as objects in calculations. Performance isn't decreased when you use formula expressions because they are run only when you refresh the database.

To use a formula expression in a member formula:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Dimensions**.
2. Select the dimension with which you want to work.
3. Select the member and click **Edit**.
4. Select **Member Formula**.
5. Select options for the following fields:
 - **Cube**

 **Note:**

With the exception of Account formulas, a formula entered for the default cube will be applied to all cubes unless it's overridden by a different formula entered for a specific cube.

Also, a default formula on Account members will only be transferred to Oracle Essbase for the source cube and not for any of the other cubes. A default formula won't be transferred to any aggregate storage cubes.

- **Data Storage:** Select a data storage option. The default is **Store**.

 **Note:**

The cube specific data storage field will not display the **Shared** or **Label Only** options. This is because a member can't be set to Shared or Label Only in one cube and not another.

- **Solve Order:** Specifies the order in which formulas are evaluated. Enter a whole number between 0 and 100000 (or use arrows to increase or decrease the number). The formulas for members that have a specified solve order are calculated in order from the lowest solve order to the highest. The default is 0.

 **Note:**

Solve order is available for aggregate storage cubes and also for block storage cubes that are enabled for Hybrid. Solve order for block storage cubes is only editable using the Simplified dimension editor. See [Accessing Edit Member Properties](#).

6. In the text box, define formulas for the member.

You can include business process formula expressions and Essbase native formulas in the member formula.

The business process provides predefined formula expressions that you can use in member formulas. You can't edit or create your own formula expressions.

7. **Optional:** To check the validity of the member formula, click **Validate**.
8. **Optional:** If there are errors in the member formula, click **Show Details** to view a description.
9. **Optional:** Click **Reset** to restore the previous member formula if you don't want to save the changes you made to the member formula.
10. Click **Save**.

Syntax

Member formula expressions support functions and variables. Follow these syntax rules for functions and variables when you create formula expressions:

- Enclose variables or properties with square brackets, []. If you omit square brackets, the variable is treated as a native variable.

- Enclose member names with quotation marks.
- Characters in variables are case-insensitive, but can't have extra spaces or characters such as underscore (_).
- You can include subcalls to other functions within an expression.
- Don't enter text where a number is required.
- The order of the outline is important in a member formula. For example, don't reference a value that has not been calculated yet.

Including Smart List Values as Variables

You can include a Smart List as a variable in a formula expression, such as the formula expression, "Status"= [Status.Departed].

"Status" is the member name, Status is the Smart List name, and Departed is a Smart List entry. If the Smart List ID for Departed is 2, Status.Departed is replaced with a 2 in the member formula (the application treats Smart Lists as numbers). If the Smart List ID for Departed is 2, 2 is put in the calculation and 2 is stored in the database.

Write Smart Lists in this format: [SmartListName.SmartListEntry]

Formula Expressions

Formula expressions can include these predefined variables and functions.

Table 24-10 Variables in Formula Expressions

Variable	Description
OpenInputValueBlock	Generates an IF statement if the application is a multicurrency application, or an empty string if it's one currency application. Used with ClosedInputValueBlock.
CloseInputValueBlock	Generates an End IF statement if the application is a multicurrency application, or an empty string if it's one currency application. Used with OpenInputValueBlock.
NumberOfPeriodsInYear	Returns the number of time periods in the year
NumberOfYears	Returns the number of years in the application

Table 24-11 Functions in Formula Expressions

Function	Description
Dimension(dimTag)	Returns the name of a predefined dimension. The dimtags are: <ul style="list-style-type: none"> • DIM_NAME_PERIOD • DIM_NAME_YEAR • DIM_NAME_ACCOUNT • DIM_NAME_ENTITY • DIM_NAME_SCENARIO • DIM_NAME_VERSION • DIM_NAME_CURRENCY

Table 24-11 (Cont.) Functions in Formula Expressions

Function	Description
Period(periodName)	Returns the specified period. The periodName options are: <ul style="list-style-type: none"> FIRST_QTR_PERIOD SECOND_QTR_PERIOD THIRD_QTR_PERIOD FOURTH_QTR_PERIOD FIRST_PERIOD LAST_PERIOD
CrossRef(accountName)	Generates a cross-reference by adding the default prefix of "No" to each dimension name (except Currency, Period and Year), followed by the specified account. For example, in an application with the following dimensions: Account, Period, HSP_View, Year, Scenario, Version, Entity, and Product CrossRef("5800") returns: "BegBalance"->"No HSP_View"->"No Scenario"->"No Version"->"No Entity"->"No Product"->"5800";
CrossRef(accountName, prefix)	Generates a cross-reference by adding the specified prefix to each dimension name (except Currency, Period and Year), followed by the specified account. The prefix should be in double quotes. For example, in an application with the following dimensions: Account, Period, HSP_View, Year, Scenario, Version, Entity, and Product CrossRef("5800", "NoX") returns: "BegBalance"->"NoX HSP_View"->"NoX Scenario"->"NoX Version"->"NoX Entity"->"NoX Product"->"5800";
CrossRef(accountName, prefix, true)	Generates a cross-reference by adding the specified prefix to each dimension name, including Year (except Currency and Period), followed by the specified account. For example, CrossRef("5800", "NoX", true) returns: "BegBalance"->"NoX HSP_View"->"NoX Year"->"NoX Scenario"->"NoX Version"->"NoX Entity"->"NoX Product"->"5800";
getCalendarTPIndex()	Generates a member formula that returns an index for the time period; the index is based on the calendar year.
getFiscalTPIndex()	Generates a member formula that returns an index for the time period; the index is based on the fiscal year.
CYTD(memberName)	Generates a calendar year-to-date formula for the member
CYTD(memberName, calTpIndexName, fiscalTpIndexName)	Generates a calendar year-to-date formula for the member, and the time period index based on the calendar year and fiscal year. Use when members are renamed. The default member names are "Cal TP-Index" and "Fiscal TP-Index."

Understanding Common Errors

Follow the rules of syntax carefully. If formula expression syntax contains errors, error messages are returned after you validate the member formula. To get information about error messages, review the formula details on the **Member Formula** tab. The most common error message is "Failed to execute." This occurs when you use parameters in the expression incorrectly. These actions cause "Failed to execute" error messages:

- Entering the wrong number of parameters in the formula expression
- Misspelling member names, functions, or variable names

- Not surrounding member names with quotation marks
- Including numbers where text is required

Administering Forms

Create forms for entering data based on your planning needs.

Related Topics

- [About Forms](#)
- [Creating Forms](#)
- [Working with Forms and Form Components](#)
- [Managing Forms and Folders](#)

About Forms


Forms are grids for entering data. You can create forms to meet your needs and then you can use the forms and other artifacts to design dashboards to summarize the data.

See [Designing Dashboards](#).

Note:


Previously, you could create composite forms (forms that comprise multiple simple forms) to summarize data. Oracle has stopped supporting composite forms. However, your existing composite forms will continue to work. Oracle recommends that you shift your usage to dashboards instead of composite forms.

Videos

Your Goal	Watch This Video
Learn how to design forms.	 Designing Forms in Cloud EPM Planning

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to how to design forms and manage task lists in Planning.	 Designing Forms and Managing Task Lists in Planning

Troubleshooting

For help with resolving form functional and performance issues, see *Resolving Form Functional and Performance Issues in Oracle Enterprise Performance Management Cloud Operations Guide*.

Form Components

Point of View

Select point of view (POV) dimensions such as year, scenario, and version to define the context for pages, rows, and columns. For example, if Scenario is Budget, all data displayed and entered in pages, rows, and columns is written to the Budget scenario dimension member. Each POV dimension is set to one member, which users can't change.

To simplify a form's POV, or better tailor it to the needs and roles of users, you specify only relevant members or define user variables. See [Defining Form Page and Point of View](#).

See also, [Managing User Variables](#).

Page Axis

Use the page axis to specify member combinations that may span dimensions so that users can work with data in smaller, logical views. Each page axis item can have members selected from different dimensions. Users see only members they can access.

You can specify multiple page drop-down lists, and select members using relationship functions or attributes. Switch between member sets by selecting them from the page axis.

You display member names or aliases on the page axis. You can specify the number of members in a page dimension that enables a search drop-down list on the data entry page, useful if dimensions contain many members. See [Defining Form Page and Point of View](#).

Rows and Columns

Rows and columns define the grid into which users enter data. For example, you can assign Unit Sales to the row axis and January to the column axis. When users access forms, they can enter data into the cell where the Unit Sales row intersects with the January column.

By default, forms have one set of rows and columns. You can add rows and columns to create asymmetrical combinations of members. See [Creating Asymmetric Rows and Columns](#).

Attribute Dimensions

In addition to using attribute dimensions as filters, you can define attributes as unique dimensions within the application so that they can be placed on an axis other than their associated base dimension. This enables you to perform cross-dimensional rollups across attribute members.

Attribute dimensions are optional on form grids and are listed separately on the **Layout** tab of the Form Designer. To use an attribute dimension in a form, drag the attribute dimension to the point of view, page, row, or column.

Caution:

Don't drag the attribute on any axis when using it as a filter as you'll cause a cross-dimensional reference which will have a performance impact. When using an attribute dimension as a filter, there is a form option that shows the associated attribute (just like there is an option to show alias). See [Defining the Layout](#).

Form Design Considerations

Forms and Cubes

When you create a form, you associate it with a cube, which determines the form's valid members. For example, if you assign a form to the Revenue cube, you can add only accounts that are valid for the Revenue cube. Entered data is saved to the selected cube's database.

Note:

- You can't change a form's cube after assigning it.
- You can edit form accounts only if their source cube matches the form's cube.
- If you add an account to a form associated with a cube other than the account's source cube, the account is read-only on that form.

Forms and Permissions

Assign permissions to a form to determine which users can modify its design (for example, layout and instructions) and input data. Users can edit forms only if they have permission to one secured dimension's member. For example, if users have read-only permission to the Europe entity, the rows and columns that include the Europe entity are read-only. Users can change data only for members to which they have write permission.

Forms and Currencies

For a single-currency application, all entities use the currency selected when the application was created. For a Standard multicurrency application, the selected Currency member on forms determines the currency in which values display. If the Currency member is Local, no

currency conversion occurs, and users can enter data in their native currency. If a currency member other than Local is selected, values are converted to the currency selected for that row or column, and the form is read-only. You can enter data in rows or columns that have Currency or Local as the selected member. See [Designing Forms for Multiple Currencies](#).

Forms and Versions

For bottom-up versions, rows and columns with level 0 members allow data entry. Rows or columns set to a parent member are read-only. The point of view must also be set to the level 0 member to allow data entry on a bottom-up version. Target versions allow data entry in parent and children members.

Filtering Form Members by Attributes

You can select members by using attributes. For example, on the Entity dimension you can select members by a specific Region such as South. The resulting grid will only contain members that have the South attribute (for example, TX, NM, and so on). Values can be entered and saved into rows and columns filtered by attributes.

Forms and Shared Members

Because you can't select shared members individually, select them using a relationship function. For example, select an alternate functional rollup to include all members under that rollup. Users can enter values in rows or columns that display shared members, and data is saved to the base members in the database.

Forms and Calculations

To optimize calculations, select row members using relationships (such as Descendants or Children) instead of selecting individual children. For example, calculating individual parent-level totals could take several passes, so use a relationship instead.

Understanding Implied Sharing in Forms

Some members are shared even if you don't explicitly set them as shared. These members are implied shared members.

When an implied share relationship is created, each implied member assumes the other member's value. The application assumes shared member relationships in these situations:

- A parent has only one child
- A parent has only one child that consolidates to the parent
- The data type of the parent is Label Only. The parent inherits the value of the first child, regardless of the child's aggregation settings.

In a form that contains members with an implied sharing relationship, when a value is added for the parent, the child assumes the same value after the form is saved. Likewise, if a value is added for the child, the parent usually assumes the same value after a form is saved.



For example, when a calculation script or load rule populates an implied share member, the other implied share member assumes the value of the member populated by the calculation script or load rule. The last value calculated or imported takes precedence. The result is the same whether you refer to the parent or the child as a variable in a calculation script.

Creating Forms

Table 24-12 Form Creation Checklist

Task	Want to Know More?
Define the layout, including: <ul style="list-style-type: none"> • Adding rows and columns • Assigning dimensions to columns and rows • Assigning attribute dimensions to the point of view, page, columns, and rows • Selecting dimension members for users to work with • Setting grid properties • Setting dimension properties • Adding formula rows and columns • Setting Smart View form display options • Setting display properties • Setting printing options • Adding and updating validation rules 	See Defining the Layout .
Define page axis and point of view	See Defining Form Page and Point of View .
Select members	See Using the Member Selector
Set form precision, context menus associations, and whether to enable dynamic user variables	See Setting Form Precision and Other Options .
Select business rules and set properties	See About Rules .
Using Smart Push	See Moving Data from One Cube to Another Cube Using Smart Push
Define access permissions	See Setting Up Access Permissions .
Design formula rows and columns	See Designing Forms with Formula Rows and Columns .
Design data validation rules	See Designing Forms with Data Validation .

To create forms:

1. Click the **Navigator** icon , then under **Create and Manage**, click **Forms**.
2. Under Form and Ad Hoc Grid Management, click .
3. On the **Properties** tab, enter a name of up to 80 characters, and an optional description of up to 255 characters.
4. Select the **Cube** associated with the form. See [Forms and Cubes](#).
5. **Optional:** Enter instructions describing how to work with the form.
6. Click **Next**, and see [Defining the Layout](#).

Defining the Layout

When you create forms, they initially contain only one row and column, and all dimensions, except for the optional attribute dimensions, are in Point of View. Add rows and columns as needed. When setting row and column layout:

- Assign at least one dimension to the row and column axis.
- You can't select the same dimension for multiple axes. To use dimensions on multiple axes, set user variables in the point of view.
- You can select a dimension from any axis and drag it to another
- You can exclude members of dimensions from the form after a dimension is assigned to a row or column.

Note:

Attribute dimensions are optional and are displayed in their own area on the **Layout** tab. Drag the attribute dimension to the point of view, page, row, or column to use it in the form.

Caution:

When working with attributes as filters, don't drag the attribute on any axis as you'll cause a cross-dimensional reference which will have a performance impact. When using an attribute dimension as a filter, there is a form option that shows the associated attribute (just like there is an option to show alias).

To define the layout:



1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Click the  icon next to a dimension on the **Layout** tab, and then drag it to the desired axis (**Rows** or **Columns**). Optionally, you can also select the attribute dimensions to use on **Point of View**, **Page**, **Rows**, and **Columns**.
3. To edit dimensions added to rows and columns, click 
next to a dimension:
 - Select **Edit** to launch the member selector and define the dimension members and variables you want to include on the form.

Table 24-13 Member Selection Options for Forms

Member Selection Option	Description
Members	Make selections by clicking a member in the member list. See Selecting Members for Forms .


Table 24-13 (Cont.) Member Selection Options for Forms

Member Selection Option	Description
Variables	Make selections for the following options: <ul style="list-style-type: none"> – User Variables (see Selecting User Variables as Members) – Substitution Variables (see Selecting Substitution Variables as Members) – Attributes (see Selecting Attribute Values as Members) – UDAs (see Selecting UDAs as Members)

- Select **Exclude** or **Exclude All** to use the member selector to define the dimension members you want to exclude:
 - **Exclude**: Selecting this option excludes members by ID. Only the specified members (base or shared) will be excluded.
 - **Exclude All**: Selecting this option excludes members by name. If a base member is specified, then the base and all of its shared members will be excluded. If a shared member is specified, then this member, its base member, and all other shared members of this member will be excluded.

Service Administrators can also choose to display or hide excluded members to users in the segment drop-down member selector list using the application setting, **Filter Out Excluded Members in Segment Drop-down**.

See [What Application and System Settings Can I Specify?](#).

- Select **Clear** to remove selections.
4. **Optional**: To change the order of dimensions in rows or columns, click , and then **Move Dimension Up** or **Move Dimension Down**.
 5. Select a row header (such as 1 or 2) to specify row properties, or a column header (such as A or B) to set column properties described in [Segment Properties](#).

To enable users to transfer global assumptions from a test to a production environment for a form, select **Global Assumptions Form**, and then update the form to store global assumptions. See [Designing Forms with Global Assumptions](#).

6. **Optional**: Add formula rows and columns. See [Adding Formula Rows and Columns](#).

Subtopics:

- [Segment Properties](#)
- [Setting Form Grid Properties](#)
- [Setting Dimension Properties](#)
- [Setting Display Properties](#)
- [Setting Smart View Form Options](#)
- [Setting Printing Options](#)
- [Including Data Validation Rules in Forms](#)
- [Enabling Drilling on Shared Members](#)

Segment Properties

To access **Segment Properties** for a form, click the row number in the form layout.

Table 24-14 Segment Properties

Option	Description
Apply to all rows	Clear to specify different properties for individual rows.
Apply to all columns	Clear to specify different properties for individual columns.
Hide	Conceal a column or row
Read-only	Create a read-only row or column, enabling users to compare old, read-only data with new, editable data.
Show separator	Create a bold border before the segment to visually distinguish it
Suppress hierarchy	Suppress indentation.
Suppress missing data	Hides empty rows or columns. Clear to display rows or columns with "#MISSING" in cells when data is missing.
Suppress invalid Scenario/ Time Periods	This option ties the column display to the start and end period for the scenario. If selected, it suppresses the display of time periods outside of the scenario time period range.
Column width	<ul style="list-style-type: none"> • Default: Use the column width defined at the grid level (under Grid Properties) • Small: 50px • Medium: 100px • Large: 300px • Size-to-Fit: Column will expand to fit data • Custom: Specify the number of pixels
Row height	<ul style="list-style-type: none"> • Default: Use the row height defined at the grid level (under Grid Properties) • Medium: Use standard height • Size-to-Fit: Row will expand to fit data • Custom: Specify the number of pixels
Enable drop-down for dimensions	Allows you to set up drop-down member selectors on row dimensions in Oracle Smart View for Office grids and business process web forms. When these drop-down selectors are enabled, form users can directly select a member from the drop-down list on the row dimension in the form. For example, suppose there are two dimensions placed on the row axes, Entities and Line item; the member selector drop-down may be enabled for the Entity dimension members, for the Line item dimension members, or for both. Depending on the settings chosen by the Service Administrator, the drop-down member selector may also allow users to add data to member rows that may have otherwise been suppressed or excluded.

 **Note:**

You cannot enable a drop-down member selector on a form that already contains a server-side member formula.

Setting Form Grid Properties

Grid properties define how rows and columns display.

To set grid properties:

1. Open the form, and then click **Layout**. See [Selecting and Opening Forms and Folders](#).

2. In **Grid Properties**, set row and column properties as follows:

Table 24-15 Form Grid Properties

Option	Description
Suppress missing blocks	On multiple rows: Greatly improves the efficiency of Suppress missing data . This option can degrade performance if no or few rows are suppressed. Test forms before and after using this setting to determine if performance is improved. Note that if you use this option: <ul style="list-style-type: none"> • Some suppressed blocks may ignore Dynamic Calc members • Row members may not indent
Suppress missing data	Hide rows or columns without data. Clear to display "#MISSING" in cells when data is missing.
Suppress invalid data	Hide rows or columns with invalid data. Cells with invalid data are read-only.

Table 24-15 (Cont.) Form Grid Properties





Option	Description
Use Database Suppression	Applies row suppression at the Oracle Essbase level instead of at the business process level, which reduces the amount of data on the business process side and eliminates the impact on query thresholds.
	<div style="border: 1px solid #0070C0; padding: 10px; background-color: #E6F2FF;"> <p> Note:</p> <p>If you use this option and you have a formula column on the form that results in a #MISSING value, the row won't appear on the form because it will be suppressed in Essbase and won't be returned to the business process for formula evaluation.</p> </div>
Default row height	<ul style="list-style-type: none"> • Medium: Row will have medium height. • Size-to-Fit: Row will expand to fit data • Custom: Specify the number of pixels
Default column width	Specify the width in pixels: <ul style="list-style-type: none"> • Small: 50px • Medium: 100px • Large: 300px • Size-to-Fit: Column will expand to fit data • Custom: Specify the number of pixels
Suppress invalid Scenario/Time Periods	This option ties the form grid display to the start and end period for the scenario. If selected, it suppresses the display of time periods outside of the scenario time period range.
Global Assumptions Form	To transfer global assumptions from a test to a production environment for a form, select Global Assumptions Form , and update it to store assumptions. See Designing Forms with Global Assumptions .
Enable Autosave	This option lets users use successive undo actions with Ctrl+Z. It also automatically saves their changes when they navigate between cells.
	<div style="border: 1px solid #0070C0; padding: 10px; background-color: #E6F2FF;"> <p> Note:</p> <p>For optimal performance, use only dense dimensions on rows and columns.</p> </div>
	See About Autosave .
Run Form Calc on Autosave	Only available if Enable Autosave is selected. If Run Form Calc on Autosave is selected, dynamically calculated cells that depend on modified and saved values (for example, a row with a formula that calculates a percentage of an aggregated parent value) are updated and display on a green background.

Table 24-15 (Cont.) Form Grid Properties

Option	Description
Suppress Missing also Suppresses Zero	<p>When this option is selected along with the Suppress missing data option for forms, all rows or columns containing both #Missing and zeros are suppressed.</p> <p>When selected, this setting overrides the runtime suppression selections made for suppressing missing data or zeroes in Oracle Smart View for Office.</p>
	<p> Note:</p> <p>For Forms 2.0, filtering is not applied if the row or column has a combination of zeroes and #Missing.</p>
Remove Form Suppressions in Ad Hoc	<p>Select to allow Smart View users to perform ad hoc analysis on a form that has other suppression options specified. If there is missing data on the form, the base dimension members for the columns or rows are displayed on the ad hoc grid in Smart View. This allows users to continue ad hoc analysis on the form, even though suppression options were enabled in form design.</p>
	<p> Note:</p> <p>Selecting this option does not override any suppression options users may have set in the Smart View Options dialog, Data Options tab. If the Remove Form Suppressions in Ad Hoc option is enabled for the form, and users see an error when performing ad hoc analysis on the form, then they should clear the suppression options in Smart View.</p>
Enable Calc On the Fly	<p>When you select this option, in Forms 2.0, when you hover over a cell with a member formula attached, you see the member formula associated with the cell and you can perform calc on the fly. Calc on the fly allows you to perform calculations without having to submit your changes.</p> <p>Note that Forms 2.0 is available only if Redwood Experience is enabled.</p>

3. Click **Save** to continue, or **Finish** to save and close the form.

Setting Dimension Properties

You can specify dimension display properties such as if to display the member names or aliases, and whether to permit users to view member formulas. These properties apply to row, column, page, and point of view dimensions.

To set dimension properties:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).

- Click in a point of view, page, row, or column dimension, then under **Dimension Properties** apply properties such as:

Table 24-16 Dimension Properties

Property	Description
Apply to all row column page dimensions	Apply properties to all row, column, or page dimensions
Apply to all POV dimensions	Apply properties to all point of view dimensions
Start expanded	For row or column dimensions: Expand and display the dimension member list.
Enable custom attributes	For row or column dimensions in Forms 1.0 only: Use custom attributes.
Drill on shared members	For row or column dimensions: Enable drilling on shared members when the shared member is on a parent member for the main hierarchy.
Flex beyond form definition	<p>For row and column dimensions in flex forms: Select to allow Oracle Smart View for Office users to add row or column members that are not included as part of the form definition.</p> <p>Enable this option on a per-row or per-column basis.</p> <p>You may also select Apply to all row dimensions, but note that all selected properties in the current row dimension will be applied to all row dimensions in the form.</p> <p>This option is displayed only when Enable flex form for rows or Enable flex form for columns, or both, is selected in the Smart View Options section of the form definition (see Setting Smart View Form Options).</p>
Row Width	<p>For row dimensions: Select from the following column sizing options:</p> <ul style="list-style-type: none"> Small: 50px Medium: 100px Large: 300px Size-to-Fit (default): Column will expand to fit content Custom: Specify the number of pixels <p>Note that this setting is retained if the form is viewed on its own or within a dashboard.</p>

- Click **Save** to continue, or **Finish** to save and close the form.

Setting Display Properties

Define display options on the **Layout** tab.

Note:

- Assign the Account dimension to a row axis.
- Account, Entity, Versions, and Scenario dimensions can't be assigned to the column axis.
- The Entity dimension can be assigned to any axis.
- Assign Version and Scenario dimensions to the page or Point of View axis.

To set display properties:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Select **Display Properties**, and then options such as:

Table 24-17 Display Properties

Option	Description
Make form read-only	Prevent users from editing the form.
Hide form	Conceal forms that are part of a dashboard, or accessed from menus or task lists.
Display missing values as blank	Display cells without data as empty cells. Clear to display "#MISSING". See Displaying #MISSING with Smart Lists .
Allow multiple currencies per entity	Enable entities to support multiple currencies, regardless of the base currency.
Enable Mass Allocate	Users must have the Mass Allocate role to use this option. See Working with Planning .
Enable Grid Spread	See Working with Planning .
Enable cell-level document	Enable users to add, edit, and view documents in form cells, depending on access permissions. See Working with Planning .
Message for forms with no data	Enter custom text to display when invalid data exist. Leave blank to display <code>There are no valid rows of data for this form.</code>
Hide Save Confirmation Message	Prevents the form save confirmation message from being displayed to users.

3. Click **Save** to save your work and continue, or click **Finish** to save your work and close the form.

Setting Smart View Form Options

Specify options for form display in Oracle Smart View for Office.

To set Smart View form options:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Select **Smart View Options**, and then settings such as:

Table 24-18 Smart View Options

Option	Description
Disable spreading	Disables spreading options in Smart View, including default spreading, spreading data for time periods, spreading using grid spread, and spreading using mass allocations.
Disable formatting	Disables the Formatting options (Save, Clear, Apply) on the provider ribbon in Smart View.

Table 24-18 (Cont.) Smart View Options

Option	Description
Repeat member labels	<p>Allows repeated member labels in forms.</p> <p>If this setting is cleared, you may override it in Smart View to allow repeated members in forms by selecting Repeat Member Labels in the Smart View Options dialog, Formatting tab.</p> <p>For forms with Enable drop-down for dimensions selected (Segment property), the form layout will automatically behave as if the Repeat member labels option is selected, regardless of whether or not it is selected.</p> <p>For flex forms (see Enable flex form for rows and Enable flex form for columns below), the Repeat member labels option is automatically enabled and cannot be cleared.</p>
Disable sheet protection	<p>Disables protection on data cells in forms in Smart View.</p> <p>Allows users to enter or paste data into cells, but does not allow users to submit the changed data.</p> <p>By default, this option is cleared.</p>
Enable flex form for rows	<p>Enables the form as a flex form on rows in Smart View.</p> <p>When this option is enabled, the Repeat member labels option is automatically enabled, and cannot be cleared.</p> <p>See Designing Flex Forms.</p>
Enable flex form for columns	<p>Enables the form as a flex form on columns in Smart View.</p> <p>When this option is enabled, the Repeat member labels option is automatically enabled, and cannot be cleared.</p> <p>See Designing Flex Forms.</p>
Show invalid members for flex form	<p>Retains invalid members on the flex form sheet after a refresh in Smart View.</p> <p>Invalid members can be the result of:</p> <ul style="list-style-type: none"> • Mistyping or misspelling a member name • Errors when copying and pasting member names from one sheet to another, or within the same sheet • Entering a member name that is beyond the form definition <p>When this check box is enabled, invalid members are retained on the sheet upon Refresh and highlighted, making them easy to find and correct.</p> <p>See Designing Flex Forms.</p>

3. Click **Save** to continue, or **Finish** to save and close the form.

Setting Prediction Options

To set prediction options to use when using Predictive Planning on a form:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Select **Prediction Options**, and then settings such as:

Table 24-19 Prediction Options

Option	Description
Include Events	Include events associated with the selected calendar by default when performing predictions on the form.
Select Calendar	Select the calendar to associate with the form by default. Any events associated with the calendar are considered for predictions if you select Include Events .

For more information about calendars and events in predictions, see [Configuring IPM Insights](#).

- Click **Save** to continue, or **Finish** to save and close the form. These selections are saved with the form, so it is the default option for all users of the form.

Setting Printing Options

To set printing options:

- Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
- Select **Printing Options**, and then settings such as:

Table 24-20 Printing Options

Option	Description
Include supporting detail	Print supporting detail as extra rows in PDF files as follows: Normal Order: In the same order as on the Supporting Detail page Reverse Order: Before the member associated with it. Supporting detail for children displays above parents, and the order of siblings is preserved
Show comments	Display cell text notes
Format data	Apply number format settings
Apply precision	Print data using a specific number of decimal places
Show currency codes	If the form supports multiple currencies, print currency codes. Currency codes display based on their use in members on the form.

- Click **Save** to continue, or **Finish** to save and close the form.

Including Data Validation Rules in Forms

You can add and update validation rules for grids, columns, rows, or cells, on the Layout tab. When processed, rules may change the color of cells, change the promotional path for approval units, and display validation messages to users during data entry.

 **Note:**

Before adding data validation rules, consider the function it will perform. For information and best practices about using validation rules:

See [Managing Data Validation](#).

To include data validation rules in forms:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Select **Validation Rules**, and then select validation rule options:

 **Note:**

The right-click menu options that display are context-sensitive, and depend on if rules and menu options were already added.

Table 24-21 Validation Rules Options

Option	Description
Add/Edit Validation Rules	Create or modify existing rules in the Data Validation Rule Builder dialog box.
Copy Paste Validation Rules	Copy selected rules and paste them in a new location.
Validate only for users with access to this form	If the current user doesn't have access to the form, don't run form validations when validating the approval unit.
Validate only for pages with existing blocks	Run validations only on page combinations that have potential blocks. The only exceptions being page combination having any Dynamic Calc, Dynamic Calc and Store, Label only, or Store with one child member settings. In this case, the page is loaded.
Validate only for cells and pages the user has access to	Run validations as the current user, using their security, and, not a Service Administrator.

3. Build and validate the rules.
See [Creating and Updating Data Validation Rules](#).
4. In the form, click **Next** to continue building the form, and then validate and save it.

Enabling Drilling on Shared Members

Form designers often use shared members to create alternate rollup structures within an application. To increase usability for these alternative hierarchies, the application provides the ability to drill on a shared member for a given dimension. The option to drill is a dimension property which provides the flexibility to focus the drill behavior to a particular dimension. The drilling option is only available for dimensions placed on the row or column axis during form design. Page or POV dimensions don't have drill capability.

For example, using the following hierarchy representing the Entity dimension:

World			
	USA		
		West	
			CA
			AZ
			CO
		East	
			NY
			MA
			PA
		South	
			TX
			FL
			NM
		North	
			WA
			MI
			MN
	Southwest		
		South (Shared)	
		West (Shared)	
	Northeast		
		North (Shared)	
		East (Shared)	

A form with iDescendants(Southwest) defined on the row would return the following members:

- TX
- FL
- NM
- South
- CA
- AZ
- CO
- West
- Southwest

To enable drilling on shared members in a form:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Click in a row or column dimension to expand **Dimension Properties**.
3. Under **Dimension Properties**, select **Drill on shared members**.
4. Click **Save**.

About Precision Settings

In **Other Options**, you can control data precision by applying minimum and maximum values for different account types. For example, you can truncate and round the decimal portion of longer numbers. Precision settings affect just value display, not their stored values. For example, if **Minimum Precision** is 2, and the value 100 from Q1 is spread to Jan, Feb, and Mar, the month cells display 33.33 when they are not selected. When selected, they display their actual values (for example, 33.33333333333333). Because the number of decimal places for storing values is finite, when the values for Jan, Feb, and Mar aggregate to Q1, 33.33333333333333 is multiplied by 3, and Q1's value is 99.99999999999998. If you select **Use Currency Member Precision Setting**, the **Currency Values** precision settings will be disabled.

Setting Form Precision and Other Options

To set precision and other options:

1. Open the form, and then click **Other Options**.
See [Selecting and Opening Forms and Folders](#).
2. In **Precision**, specify the number of decimal positions displayed in a cell for **Currency Values**, **Non-Currency Values**, and **Percentage Values**.

See [About Precision Settings](#).

Specify **Minimum** values to add zeros to numbers with few decimal places. Specify **Maximum** values to truncate and round the decimal portion of large numbers. For example:

Table 24-22 Data Precision Examples

Value	Minimum Precision	Maximum Precision	Displayed Value
100	0	Any	100
100	3	Any number greater than or equal to 3 or None	100.000
100.12345	Any number less than or equal to 5	None	100.12345
100.12345	7	None	100.1234500
100.12345	Any number less than or equal to 3	3	100.123
100.12345	0	0	100
100.12345	2	4	100.1235
100	2	4	100.00

Note:

Your selections override the precision set for the currency member. To use the currency member's precision setting instead, select **Use Currency member precision setting**.

3. Under Context Menus, associate menus with the form by moving them from **Available Menus** to **Selected Menus**. For multiple menus, click a "move" options on the right to specify the display order.

For information on how to create Context Menu (Action Menu):

See Administering Action Menus.

4. Select **Enable dynamic user variables** to allow dynamic user variables in the form, and move **Available User Variables** to **Selected User Variables**.

See Dynamically Setting User Variables.

Moving Data Using Smart Push

For more meaningful and complete reporting, you can use Smart Push to instantly move comments, attachments, and supporting detail from source cubes to a reporting cube while working in forms. Users can then do more analysis on the data coming from the different cubes.

To learn how to move data using Smart Push, see *Moving Data from One Cube to Another Cube Using Smart Push* in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Troubleshooting

For help with resolving issues with Smart Push, see *Resolving Issues with Smart Push* in *Oracle Enterprise Performance Management Cloud Operations Guide*.



Creating Asymmetric Rows and Columns

Asymmetric rows and columns contain different sets of members selected across the same dimensions. For example:

Row/Column A—Scenario = Actual, Time Period = Q1

Row/Column B—Scenario = Budget, Time Period = Q2, Q3, Q4

To create asymmetric rows or columns:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Click  to select the dimension to modify.
3. Click  to the right of the dimension name, and then modify the members selected for this dimension.
See [Using the Member Selector](#).
4. Click **Save** to continue, or click **Finish** to save and close.

Adding Formula Rows and Columns



You can define formulas for rows and columns. For example, you can create a formula column to calculate the percentage variance between monthly sales columns. The formula for a row or column applies to all row or column dimensions. To define or assign existing formulas to forms, select the row or column on the **Layout** tab, and use the options under **Segment Properties**.

See [Creating Formulas](#).

 **Tip:**

Consider adding a formula row between two other rows to create a blank row. Blank rows help you visually separate subtotals and totals in a form.

To add formula rows and columns:



1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. On the **Layout** tab, right-click **Rows** or **Columns**.
3. Select **Add Formula Row** or **Add Formula Column**.
4. Click the new **Formula Label**, and then enter the formula name.
5. Click the row or column number of the Formula Label, and specify **Segment Properties** such as **Display formula on form** so users can view the formula when they click .
6. Under **Segment Properties**, for each dimension in **Formula Data Type**, select how to display the formula result, such as a Currency, Noncurrency, percentage, SmartList, Date, or in a Text format.
7. Enter the formula, and then click .
See [Editing Formulas](#).
8. Click **Validate** to find and fix any errors.

Defining Form Page and Point of View

You can select dimensions and members for the page axis and point of view (POV). POV dimensions and members must be valid for the form cube, and not assigned to a page, column, or row axis. The POV sets the members that define data intersections and the form's context. If you use user variables, variable names displays in the POV.


See [Managing User Variables](#).

To define page axis and point of view:

1. Open the form, and then click **Layout**.
See [Selecting and Opening Forms and Folders](#).
2. Click  and then drag that dimension to **Page**.
3. Click  for each page axis dimension and select members.
See [Using the Member Selector](#).

 **Note:**

To shorten the number of members displayed in the member list so that the **Search** box can be easily seen, go to the Home page, click **Application**, and then click **Settings**. For the **Number of Items on the Page Drop-down** option, enter a lower value.

4. Repeat Steps 2 and 3 as needed. Assign multiple dimensions to the page axis to enable users to change dimensionality while entering data. They can use **Display Properties** to use the most recent selection.
5. Specify **Dimension Properties**.
See [Editing Dimension Properties](#).
6. Click  and drag a dimension to **Point of View** to add them, or members, to the form's point of view.
7. Specify **Dimension Properties**.
See [Editing Dimension Properties](#).
8. Click **Save** to continue, or **Finish** to save and close.

Designing Specific Types of Forms

- [Designing Forms for Multiple Currencies](#)
- [Designing Forms with Formula Rows and Columns](#)
- [Designing Forms with Data Validation](#)
- [Designing Forms with Global Assumptions](#)
- [Designing Forms for Rolling Forecasts](#)
- [Designing Flex Forms](#)

Designing Forms for Multiple Currencies

To allow users to work with currencies other than entities' base currencies, perform one task:

- Select members from at least two currencies to compare converted currencies in the same form.
- Assign the Currency dimension to the page axis and select reporting currencies as members to convert currencies for all the members in the form. Users can then select a currency member from the page axis and launch the Calculate Currencies business rule to view values in that currency.

Designing Forms with Formula Rows and Columns

Formula rows and columns contain formulas that perform mathematical calculations on grid members. For example, you might want to rank values in a particular column or calculate variance between two rows. A formula consists of grid references, arithmetic operators, and mathematical functions. To define or assign existing formulas to forms, select the appropriate row or column on the **Layout** tab and then make selections under **Segment Properties**.

See [Adding Formula Rows and Columns](#).

For information about creating formulas and using the mathematical functions:

See [Form Formula Functions](#).

Designing Forms with Data Validation

You can design forms that include predefined data validation rules that help implement business policies and practices. You can specify cell colors and data validation messages that are generated on the form if entered data violates a validation rule. Data validation rules are saved as part of the form. See [Including Data Validation Rules in Forms](#).

See also, [Managing Data Validation](#).

Designing Forms with Global Assumptions

Form designers typically create a specific-purpose form that stores global assumptions (also called "drivers" or "driver data"), such as a depreciation value, tax rate, or unit price. This is useful if you want to migrate the form's driver data using Migration, for example, from a test environment to a production environment. Such forms are typically small, and are used as "lookup tables" that drive calculations.



Note:

Global assumptions can't be used with dashboards or forms with multiple segments.

To enable transferring global assumptions from a test to production environment during form design:

1. In the **Layout** tab, click **Grid Properties**.
2. Under **Other**, select **Global Assumptions Form**.
3. Update the form to store driver data such as a tax rate. When migrating with Migration, this enables migrating the driver data contained in the tagged form.

Designing Forms for Rolling Forecasts

Related Topics

- [About Rolling Forecasts](#)
- [Creating Rolling Forecasts](#)
- [Modifying Rolling Forecast Variables](#)

About Rolling Forecasts

In a traditional forecast, the forecast cycle is always tied to the fiscal year end, and the months in the forecast period keep reducing as the months in the fiscal year progress.

Rolling forecasts differ from traditional forecasts in that they are continuous without regard to the annual fiscal year end period. The periods in a rolling forecast roll along based on the predefined window for the rolling forecast. The periods are generally defined on a monthly or quarterly basis. Monthly rolling forecasts are generally in 12-month, 18-month, or 24-month cycles. In a 12-month cycle, the 12-month period constantly shifts each month, and every month the forecast is for the next twelve months without regard to the actual fiscal year end.

For example, assume a company has a fiscal calendar for July through June. In the first month of year (Jul, FY11) the company's users fill in the forecast scenario for the periods Jul 11 – Jun

12. In the next month (Aug 11), the users again fill in the forecast scenario with numbers for the next 12 months (Aug 11- Jul 12), even though the period of Jul 12 pertains to the next fiscal year of Jul FY12-Jun FY13.

Following are some examples of rolling forecasts:

Figure 24-1 12-Month Rolling Forecast

Year and Period in Columns With No Additional Segment

	FY12 Jul	FY12 Aug	FY12 Sep	FY12 Oct	FY12 Nov	FY12 Dec	FY12 Jan	FY12 Feb	FY12 Mar	FY12 Apr	FY12 May	FY12 Jun	FY13 Jul	FY13 Aug	FY13 Sep	Total 12 month rolling
Actual	50	50	50													
Plan/Budget	200	200	200	200	200	200	200	200	200	200	200	200	300	300	300	
12 month Rolling Aug	50	75	75	75	75	75	75	75	75	75	75	75	125			
12 month Rolling Sep	50	50	75	75	75	75	75	75	75	75	75	75	125	125		
12 month Rolling Oct	50	50	50	75	75	75	75	75	75	75	75	75	125	125	125	

Figure 24-2 Quarterly Rolling Forecast

	FY12 Q2	FY12 Q3	FY12 Q4	FY13 Q1	FY13 Q2	FY13 Q3	FY13 Q4
FY12 Q2 Review	F	F	F	F			
FY12 Q3 Review	A	F	F	F	F		
FY 12 Q4 Review	A	A	F	F	F	F	
FY13 Q1 Review	A	A	A	F	F	F	F

Figure 24-3 Quarterly Trailing Rolling Forecast (Rolling Quarters with a Cumulative Total)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	12 qtrs rolling
Project 1	25	35	45	55	65	75	85	95	105	115	125	135	960
Project 2	50	60	70	80	90	100	110	120	130	140	150	160	1260
Project 3	75	85	95	105	115	125	135	145	155	165	175	185	1560
Project 4	100	110	120	130	140	150	160	170	180	190	200	210	1860
Project 5	125	135	145	155	165	175	185	195	205	215	225	235	2160

Figure 24-4 Rolling Forecast Where There are Additional Segments for Actual and Plan Year

Year and Period in Columns

	12 month Rolling Aug												Actual FY12 YearTotal	Plan FY13 YearTotal		
	FY12 Jul	FY12 Aug	FY12 Sep	FY12 Oct	FY12 Nov	FY12 Dec	FY12 Jan	FY12 Feb	FY12 Mar	FY12 Apr	FY12 May	FY12 Jun			FY13 Jul	FY13 Aug
Account 1	50	75	75	75	75	75	75	75	75	75	75	75	125		600	3600

Creating Rolling Forecasts

 **Note:**

Only Service Administrators can create and work with rolling forecasts. This includes the ability to see the rolling forecast option when designing a form, the ability to move a rolling forecast from the user interface, and the ability to delete or modify substitution variables.



To design a form for a rolling forecast:

1. Create a new form.
See [Selecting and Opening Forms and Folders](#).
2. In the Layout tab, drop the **Years** and **Period** dimensions in the column axis.
3. Right-click the column segment header and select **Rolling Forecast Setup**.

The Rolling Forecast Setup menu option is only available when the Years and Period are in the same grid axis (row or column).

4. In the **Rolling Forecast Setup** dialog box, enter the following information:

Table 24-23 Rolling Forecast Setup Options

Option	Description
Prefix	Allows rolling forecast substitution variables to be distinct from other substitution variables; for example, 4QRF designates that the forecast is a 4-quarter rolling forecast.
Reuse existing substitution variables	Select if you wish to specify a prefix that you have previously used.
Start Year	The year in which the rolling forecast starts; for example, FY11. Either enter the start year or click  to open the Member Selection dialog box. If you entered a prefix that matches the prefix of an existing rolling forecast substitution variable and selected Reuse existing substitution variables , the Start Year is automatically filled in with the start year of the existing substitution variable.
Start Period	The period in the year in which the rolling forecast starts; for example, Q1. Either enter the start period or click  to open the Member Selection dialog box. If you entered a prefix that matches the prefix of an existing rolling forecast substitution variable and selected Reuse existing substitution variables , the Start Period is automatically filled in with the start period of the existing substitution variable.
Number of Periods	Number of year/period combinations that will be generated as separate segments.

5. Click **Generate**.

The defined substitution variables are created, and additional column segments are created in the form that contain the substitution variable combinations for the rolling forecast.

 **Note:**

- Substitution variables are based on the periods selected for the Start Year and Start Period.
See [Selecting Substitution Variables as Members](#).
- When designing a form, if the Rolling Forecast Setup dialog box is brought up from a row or column with the Year and Level 0 time period selected (for example, FY12/Jan), the Start Year and Start Period are automatically filled in. Values are not automatically filled in if members in the column are selected using functions, variables, or non-level-0 members.
- To reuse the rolling forecast variables in a different form, right-click the column header in the new form to invoke the Member Selector.

Modifying Rolling Forecast Variables

You can revise the values for rolling forecast substitution variables directly in the form.

To modify rolling forecast variables in a form:

1. From the Home page, click **Data**.
2. Open the rolling forecast form.
3. Select a column header in the form, click **Actions**, and then select **Set Rolling Forecast Variables**.
4. In the **Set Rolling Forecast Variables** dialog box, enter or edit values for the Years and Period dimensions.

You can shift the values up or down by changing the selection next to **Shift Values By**. When you change the selection next to **Shift Values By**, the values for the Years and Period dimensions are automatically repopulated to show the resulting year and period values after the shift.

5. Click **Apply**.

The new values flow through to all the forms where these substitution variables are used, and those forms will reflect the changes.

Designing Flex Forms

Flex forms are a form type that provides flexible row and column management in Oracle Smart View for Office.

Flex forms retain all regular form properties and features, such as running business rules attached to the flex form, running rules on save or before save, and enabling some ad hoc-specific functionality. However, with flex forms, dimension and member row and column cells and all data cells are unprotected. This means that Smart View users can rearrange row and column members, and sort or move rows or columns. Modified row and column order is maintained on refresh and during submit. Smart View users can also filter data using Excel's filtering functionality.

**Note:**

Flex forms are used only in Smart View and not in the web interface.

During form definition:

- Select **Enable flex form for rows**, or **Enable flex form for columns**, or both, to enable flex form-specific features. These options are located in the **Layout** tab, under **Smart View Options**.

See [Setting Smart View Form Options](#).

- If you have selected **Enable flex form for rows**, or **Enable flex form for columns**, or both, then you can enable the **Show invalid members on flex form** option. This option is located in the **Layout** tab, under **Smart View Options**.

When entering member names in a flex form, errors may occur; for example, a user may mistype or misspell a member name; make an error when copying and pasting member names from one sheet to another, or within the same sheet; or enter a member name that is beyond the form definition, resulting in an invalid member. By enabling the **Show invalid members for flex form** option, the flex form will retain any invalid members on the form after refresh. Invalid members are highlighted making them easy to locate and edit. After users make necessary corrections to member names and refresh again, they can then enter and submit data on the flex form.

See [Setting Smart View Form Options](#).

- On a row-by-row basis, or column-by-column basis, or both, enable the **Flex beyond form definition** option. The **Flex beyond form definition** property is located under **Dimension Properties** in the **Layout tab** when a row or column is selected.

When this option is enabled for a row or column dimension, Smart View users may add row or column members to the flex form that are not included as part of the form definition. Do this only for the rows or columns you require flex functionality.

See [Setting Dimension Properties](#).

- Define action menus to open another flex form in Smart View.

To define action menus:

See [Administering Action Menus](#).

To attach an action menu to a flex form:

See [Setting Form Precision and Other Options](#).

For information on using flex forms:

See [Flex Forms](#) in *Working with Oracle Smart View for Office*.

Videos

Your Goal

Learn how to enable and work with flex forms.

Watch This Video



[Planning with Flex Forms in EPM Cloud Planning](#)

Working with Forms and Form Components


Related Topics

- [Selecting and Opening Forms and Folders](#)
- [Previewing Forms](#)
- [Printing Form Definitions](#)
- [Searching for Forms](#)
- [Editing Forms](#)
- [Moving, Deleting, and Renaming Forms](#)
- [How Cell Formatting in Smart View Persists in Planning](#)



Selecting and Opening Forms and Folders

Use these procedures to select and open form folders and the forms they contain.

To select and open form folders or forms:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Forms**.
2. Perform one of the following steps:
 - To open a folder, expand Library beneath **Folders**, and then select a form folder.
 - To open a form, expand Library beneath **Folders**, select a form folder, and then select a form from the list that displays in the **Form and Ad Hoc Grid Management** pane.
3. After you select a form folder, use the buttons next to **Folders** to create, delete, rename, move, and assign access to the folder.
4. To manage forms, select one of the following actions in the **Form and Ad Hoc Grid Management** pane:
 - To open the form, select a form, and then click **Edit**.
 - To create a form, click **Create simple form**.
 - To edit, delete, move, assign access, rename forms, or show usage (for composite forms only), select a form, and use the corresponding button.

The icon next to the form name indicates the type of form:

-  Simple form
-  Composite form

Note:

Oracle has stopped supporting composite forms. However, your existing composite forms will continue to work. Oracle recommends that you shift your usage to dashboards instead of composite forms.

-  Ad hoc grid

For information about setting up ad hoc grids:

See Using Ad Hoc for Data Entry and Analysis in *Working with Planning*.

Previewing Forms

While you're designing forms, you can preview the dimensions that are assigned to the Point of View, columns, rows, and page axes. Previewing displays member attributes, alias, and data associated with forms, although new data can't be entered.

Previewing completes regular form design validation checks, and checks for proper evaluation of any data validation rules included in the form. Data validation rules must be properly completed before the form can be saved. In addition, data validation rules are saved as part of the form. If you don't save changes to a form, any data validation rule changes made after the form was last saved are lost.


To preview a form's design:

1. Under **Form and Ad Hoc Grid Management**, select a form, and then click **Edit** to open the form.
2. With the form open, click **Preview**.
The form opens in edit mode in a new tab.
3. Resolve any issues reported during the design validation checks, including any issues with data validation rules.
4. Save the form to ensure that updates are saved, including any changes to data validation rules.

Printing Form Definitions

Service Administrators can print form definition reports that include information on dimension members, business rules, access permissions, and other form components.

To create and print form definition reports:

1. Click the **Navigator** icon , and then under **Monitor and Explore**, click **System Reports**.
2. Select the **Forms** tab.
3. Under **Select Report Options**, select the form definitions to print by moving them from **Available Forms** to **Selected Forms**.
4. **Optional:** Select **Include Member Selection List** to include column and row members on the report.
5. **Optional:** Select **Include Business Rules** to include associated business rules.
6. Click **Create Report**.


Adobe Acrobat generates a consolidated report, including:

- Cube
- Description
- Column dimension and members and additional column definitions
- Row dimension and members and additional row definitions
- Page and Point of View dimensions
- Form access permissions

- Associated business rules
7. To print the report, select **File**, and then **Print** on the Adobe toolbar.

Searching for Forms

To search for forms:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Forms**.
2. Under Form and Ad Hoc Grid Management, enter part or all the form name in the **Search** box, and press **Enter**.

Ignoring capitalization, Search finds the next match.

3. Click  to search forward (down) or  to search backwards (up).

Editing Forms


You can edit the layout, members, and properties of forms. For example, you can add formula rows or columns to a form.

Note:

Previously, you could create composite forms (forms that comprise multiple simple forms) to summarize data. Oracle has stopped supporting composite forms. However your existing composite forms will continue to work. Oracle recommends that you shift your usage to dashboards instead of composite forms.

See [Designing Dashboards](#).

To edit forms:

1. Select the form, then click  (see [Selecting and Opening Forms and Folders](#)).
Alternatively, on the Home page, you can click **Data**. Expand a form folder, click the name of a form to open it, click **Actions**, and then select **Edit**.
2. Select:
 - a. **Properties** to edit the description and instructions. See [Creating Forms](#).
 - b. **Layout** to edit form layout. See [Defining the Layout](#).
 - c. **Other Options** to edit form precision, change the context menus associated with the form, enable/disable dynamic user variables, and select user variables. See [Setting Form Precision and Other Options](#).
See also, [Administering Action Menus and Dynamically Setting User Variables](#).
 - d. **Business Rules** to change which business rules are associated with the form, or modify business rule properties.
See [Administering Rules](#).
3. Choose an option:
 - To save your work, click **Save**.

- To save a variant of a form with a new name, click **Save As**, enter a **New Form Name**, and then click **OK**. The updated form with the new name is added to the form list. If Redwood Experience is enabled, the newly named form opens in a new dynamic tab.

Moving, Deleting, and Renaming Forms

To move, delete, and rename forms:

1. Select the form.
See [Selecting and Opening Forms and Folders](#).
2. Perform any of the following tasks:
 - To move a form, click **Move**, and then select the destination folder.

 **Note:**

You can move multiple forms simultaneously if they are in the same folder.

- To delete a form, click **Delete**.
 - To rename a form, click **Rename**, and then enter the new name.
3. Click **OK**.

How Cell Formatting in Smart View Persists in Planning

 **Note:**

Before you perform the following steps:

See Saving Native Excel Formatting to EPM Cloud in *Working with Oracle Smart View for Office 22.100*.

To select the formatting for a form:

1. In the form, right-click, and then select **Apply**.
2. Select:
 - **Cell Styles**: To use the business process formatting
 - **Custom Styles**: To use the formatting saved in Oracle Smart View for Office

For more information:

- On which Microsoft Excel formatting features are supported in Smart View and Planning:
See About Smart View Formatting in Planning Forms in *Working with Planning*.
- On saving Excel formatting:
See the [Oracle Smart View for Office User's Guide](#).

Managing Forms and Folders

Use the Form and Ad Hoc Grid Management and the Business Rule Folders pages to manage folders and forms. To access the Form and Ad Hoc Grid Management page, click the

Navigator icon , and then under **Create and Manage**, click **Forms**. You can access the


Business Rule Folders by clicking the **Navigator** icon , and then selecting **Rules Security** under **Create and Manage**.

Table 24-24 Tasks

Task	Topic
Create folders	Creating Folders
Move, delete, or rename folders	Working with Folders
Create forms	Creating Forms
Assign permissions to forms and folders	About Assigning Permissions to Artifacts, Rules, and Folders
Move and delete forms	Moving, Deleting, and Renaming Forms



To view all forms or business rules in a folder, click the folder's name in the left-hand folders area. To select all the forms, select the check box at the top of the forms list.

Creating Folders

Use folders to hierarchically organize forms and business rules. You can move folders within the hierarchy, and give folders the same name if they are on different hierarchical levels. You can't:

- Delete folders unless they are empty
- Select multiple folders
- Rename, move, or delete the top-level folder. For Forms, the top-level folder is called Library. For Business Rules, the top-level folder is called CalcMgrRules.
- Add files to the top-level folder unless you're an administrator

To create folders:

1. Perform an action:
 - For form folders: Click the **Navigator** icon , and then under **Create and Manage**, click **Forms**.
 - For Calculation Manager business rule folders: Click the **Navigator** icon , and then under **Create and Manage**, click **Rules Security**.
2. Select the folder under which to create the folder.
3. Above the folders list, click **Create**.
4. Enter the folder name.
5. Click **OK**.

Working with Folders

To move, delete, or rename folders:

1. For form folders: Click the **Navigator** icon , and then under **Create and Manage**, click **Forms**.

For business rule folders: Click the **Navigator** icon , and then under **Create and Manage**, click **Rules Security**.

2. Select the folder to move, delete, or rename.
3. Perform a task:
 - To move, click **Move**. Select the destination folder to which to move the selected folder.

 **Note:**

When you move folders, all nested folders, forms, and Calculation Manager business rules within them are also moved.

- To delete, click **Delete**.
 - To rename, click **Rename**, and then enter the new name.
4. Click **OK**.

 **Tip:**

Did you know that folder names can be localized based on the user's browser locale? To localize a folder name (for example, from English to Japanese), you can customize the folder name on the **Artifact Labels** page in the **Tools** cluster. For more information:

See [Specifying Artifact Labels](#).

Administering Rules

- [About Rules](#)
- [Adding and Removing Rules in Forms](#)
- [Setting Business Rule Properties](#)
- [Viewing Rules Usage](#)
- [About Runtime Prompts](#)
- [Using Groovy Rules](#)

About Rules

With appropriate access, users can launch business rules from the application. Rules can also prompt users for input when rules are launched.

To launch business rules from within data forms or independently in the application, the rules must be deployed from Calculation Manager. For optimum performance, business rules that run in forms should be designed to execute within three minutes. For rules with a longer execution time, you can schedule batch processing or run the rules during non-peak hours.

You can diagnose performance issues with business rules and pinpoint and address any issues using activity reports. Activity reports identify which business rules are taking the longest to execute. You can then open the rules in Calculation Manager, review the log, and optimize the steps within the rule to improve performance.

For information on:

- Creating, updating, and deploying business rules, see *Deploying Business Rules and Business Rulesets from the Deployment View in Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud*
- Using runtime prompts, see [About Runtime Prompts](#)
- Generating a report that details where rules are used, see [Viewing Rules Usage](#)
- Viewing an activity report to diagnose rules performance issues, see [Viewing Activity Reports](#)
- Optimizing business rules, see *Optimizing Business Rules in Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud*

Troubleshooting

For help with designing rules to avoid common execution errors and optimizing slow rules, see *Troubleshooting Business Rule Errors and Performance in Oracle Enterprise Performance Management Cloud Operations Guide*.

Adding and Removing Rules in Forms



You can associate one or more rules with a form, by cube. Users can launch associated rules from the form to calculate and allocate values. You can set whether each rule associated with a form automatically launches when the form is opened or saved. You can also change the order in which the rules are launched or remove rules from a form.

Note the following:

- Rules must be deployed to the business process from Calculation Manager before you can add rules to business process forms.
See [About Rules](#).
- Likewise, if a rule is deleted in Calculation Manager, the rules must be redeployed to the business process in order for them to no longer be used in the business process. Optionally, you can manually remove a rule from a form using the procedure in this topic.
- Rules that are set to automatically run when a form is loaded or saved never run in the background.

To add, update, or remove business rules in forms:

1. Take an action:

- To update the current form, click **Actions**, and then click **Business Rules**.
 - To open a form for editing so you can associate rules, go to the Home page and click the **Navigator** icon , and then under **Create and Manage**, click **Forms**. Select the form, click , and then click **Business Rules**.
2. From the **Cube** drop-down menu, select the cube.
 3. From the **Business Rules** list, select the rules to associate with the form, and add them to **Selected Business Rules**. To remove associated rules, select the rules under **Selected Business Rules** and remove them.

By default, the Calculate Form rule and the Calculate Currencies rule is selected. Calculate Form is automatically created for forms to calculate subtotals. Calculate Currencies is created for forms that include multiple currencies in a row, column, or page, to enable converting values among the available currencies. You can remove Calculate Currencies if you use customized calculation scripts to calculate currency conversions. You can remove Calculate Form to prevent users from calculating data in forms.

4. To change the order of selected business rules (the order in which rules display and launch), select a business rule in **Selected Business Rules** and click the up or down arrow to move it up or down in the list. The rule listed first displays and launches first; the rule at the bottom of the list displays and launches last.

Caution:



The order in which business rules launch is important and may affect data. For example, it's important to convert currencies first, before subtotaling.

5. To set business rule properties, click **Properties**.
See [Setting Business Rule Properties](#).
6. Click **Save** to save your work and continue creating or editing the form, or click **Finish** to save your work and close the form.

Setting Business Rule Properties

You can specify whether business rules associated with forms launch automatically when users load (open) or save the form. If business rules have runtime prompts, you can set whether the default members in the runtime prompt match the members selected in the page and Point of View axes.

To set business rule properties:

1. Take an action:
 - To update the current form, click **Actions**, and then click **Business Rules**.
 - To open a form for editing, go to the Home page and click the **Navigator** icon , and then under **Create and Manage**, click **Forms**. Select the form, click , and then click **Business Rules**.
2. There are four phases in a form where a rule can be assigned and each may have information relevant to that phase. Select from the following:
 - **Run Before Load**

- **Run After Load**
- **Run Before Save**
- **Run After Save**

 **Note:**

- **Run After Load** and **Run Before Save** are enabled only for Groovy rules. You can't select these options for calc scripts or graphical rules. For more information about Groovy rules, see [Using Groovy Rules](#).
- Some actions such as saving the grid, changing the page, or launching an action menu item will also reload the page after the operation completes. This ensures the grid contains the newest data. When this happens, the before and after load actions will run as they do in normal page loads.
- While hidden runtime prompts are not supported for calc script rules on the before and after load options, they are supported for Groovy rules.
- For information about where Groovy rules are supported, see [About Groovy Business Rules](#).

3. **Optional:** If a business rule has runtime prompts, select **Use Members on Form** to match the default member selection on the runtime prompt window to the current members in the page and Point of View axes of the open form.

To learn how this option interacts with other settings and conditions, see [Understanding Runtime Prompts](#).

4. **Optional:** To hide the runtime prompt value from the user, select **Hide Prompt**, which automatically selects **Use Members on Form**.

After saving the form, the next time you return to this page, **Use Members on Form** displays as selected.

You can hide runtime prompts if:

- All runtime prompt member values are filled in (appropriate dimension members can be read from form's Page/Point of View)
- No dimensions are repeated in the runtime prompt

5. Click **OK**.

Viewing Rules Usage

Business rules can be used in the following artifacts:


- Forms
- Rulesets
- Menus
- Task lists

Service Administrators can generate a report, called the Rules Usage Report, that details where rules are used. Filters enable you to refine the details by rule name, rule type, and cube.

 **Note:**

The only rules listed in the Rules Usage Report are those rules that are deployed in the business process.

To view rules usage:

1. Click the **Navigator** icon , and then under **Monitor and Explore**, click **System Reports**.
2. Click the **Rules Details** tab.
3. If filtering, select filter criteria, and then click **Apply Filter**:
 - **Rule Type**: Choose one or more options: **All**, **Rules**, and **Rulesets**
 - **Cube**: Choose from a list of available cubes.
 - **Name Filter**: Enter a rule or ruleset name. Optionally, you can use wildcard characters.

The **Rules** list displays the rules that are deployed in the business process and that match the filter criteria.

4. For **File Format**, select one of the following formats:
 - **XLSX** (default)
 - **PDF**
 - **HTML**
 - **XML**

 **Note:**

Choosing XML format enables you to configure the Rules Usage Report with the help of Oracle BI Publisher Add-in for MS Office. You can have greater control over which columns to display in your report, the order in which the columns are displayed, whether to apply sorting, and so on.

5. Click **Create Report**.

The Rules Usage Reports provides the following information:

- Rule Name
- Rule Type
- Cube
- Primary Association (Type and Name)
- Secondary Association (Type and Name)

Primary association refers to the rule that is associated with the artifact directly; for example, a rule linked to a form or to a task. Secondary association refers to the rule that is associated with an artifact indirectly; for example, a rule that is linked to a menu item, and the menu item is linked to a form, or a rule that is linked to a task for a given task list.

Rules in the generated report are displayed in alphabetical order as follows:

- Rule name
- Primary association type
- Primary association name

Example 24-1 Sample Rules Usage Report Showing Primary Associations (PDF Format)



Rules Usage Report

Rule Name	Rule Type	Cube	Primary Association		Secondary Association	
			Type	Name	Type	Name
Act_Agg_Ek	Rules	PSPPlan1				
Adhoc - Clear 5+7	Rules	PSPPlan1				
Agg	Rules	PSPPlan1	Form	_XX_Agg		
Agg - Roll up E and O from drop down, Customer in row, all others at none	Rules	PSPPlan1	Form	1 - Corp Prof Fees		

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Example 24-2 Sample Rules Usage Report Showing Primary and Secondary Associations (PDF Format)

Rule Name	Rule Type	Cube	Primary Association		Secondary Association	
			Type	Name	Type	Name
psp_Agg_budget	Rules	PSPPlan1				
psp_Agg_Fcs_t_All Dims	Rules	PSPPlan1	Task	Aggregation	Task List	Execute Royalty Calc
psp_Agg_FC@AER_All Dims	Rules	PSPPlan1				
psp_Agg_budget_All Dims	Rules	PSPPlan1				
psp_Rowfocused_Agg	Rules	PSPPlan1	Form	1.0 psp_Agg		
psp_Agg_Actuals_All Dims	Rules	PSPPlan1				

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About Runtime Prompts

When launched, business rules can prompt users for such variables as members, text, dates, or numbers. Prompts should be specific and tell users what type of data is expected. For example:

- Select a month.
- Enter the expected number of customer visits per quarter.
- What percentage change in earnings do you expect next month?

If, in Calculation Manager, the option **Create dynamic members** is selected for the business rule and the parent member is enabled for adding dynamic children, then users can create new members by entering their name in the runtime prompt.

When launching business rules with runtime prompts, the application validates the value entered, but not the business rule. To set the default member selection in a runtime prompt, see [Setting Business Rule Properties](#). To understand how other settings and conditions affect runtime prompts, see [Understanding Runtime Prompts](#).

Understanding Runtime Prompts

The display and values of runtime prompts are affected by such aspects as:

- Whether the **Use as Override Value** property is set at the rule or the ruleset level at design-time

- Whether there are valid members on the form's Page/Point of View and whether the **Use Members on Form** and **Hide Prompt** options on the **Business Rule Properties** tab are selected (see [Setting Business Rule Properties](#))
- Whether the **Runtime Prompt** option is set during form design or set when designing the runtime prompt (see *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud*)
- Whether the **Use Last Value** property is set when designing the business rule
- Whether, in Calculation Manager, the option **Create dynamic members** is selected for the business rule and the parent member is enabled for adding dynamic children. If yes, then users can create new members by entering their name in the runtime prompt.

 **Note:**

In the business process, runtime prompt values aren't replaced inside double quoted text. Alternately, you can use Groovy rules to achieve the same. However, launching a rule from Calculation Manager will replace runtime prompt values in double quoted text.

Principles:

1. If the **Use as Override Value** property is set at the rule or the ruleset level at design-time, the value overridden at the rule level or the ruleset level will take precedence over the values of members in the Page/Point of View and the last saved value. This occurs regardless of where the rule is launched (from the form or from the **Rules** link on the **Navigator** menu), and regardless of whether the runtime prompt is hidden during design. The **Override Value** can be set as a user variable, in which case the rule will be launched with the current value of the variable.
2. When launched from a form, the values of members in the Page/Point of View take precedence over the last saved value if the **Use Members on Form** option is selected, regardless of whether the runtime prompt is hidden during design. The business rule is run without displaying the hidden runtime prompt to users, and the runtime prompt values are taken from the Page/Point of View members.
3. If the **Use Last Value** option is selected for the runtime prompt at design time, and if any of these conditions exist:
 - **Use Members on Form** isn't selected
 - A runtime prompt is launched from the **Rules** link on the **Navigator** menu
 - Values can't be pre-filled from the context

Then the precedence of runtime prompt values is determined by:

- a. The last saved value takes precedence.
- b. If a ruleset is launched, the value overridden at the ruleset level at design-time is used.
- c. If a business rule is launched, the value overridden at the rule-level at design-time is used. If it's not overridden at the rule-level, the runtime prompt value at design-time is used.

Runtime prompts that are hidden at design time never use the last saved value. In these cases, the **Use Last Value** setting is ignored.

- The **Use Members on Form** and **Hide Prompt** options apply only to Member and Cross Dimension runtime prompt types (Cross Dimension runtime prompt types are available only for business rules created with Calculation Manager).

The value set at the rule or the ruleset level at design-time when the **Use as Override Value** property is set participates in the **Hide Prompt** behavior.

- For Cross Dimension runtime prompts: the runtime prompt isn't hidden unless all the prompts in the runtime prompt can be pre-filled from the **Override Value** or Page/Point of View. The runtime prompt is displayed with some values pre-filled from the **Override Value** or Page/Point of View and others filled according to Principles 1, 2 and 3.

This table describes the result on runtime prompts of these settings and conditions:

Table 24-25 How Member Availability and Other Settings Affect Runtime Prompts

Availability of Override Value and member on the Page/Point of View	Use Members on Form option is selected	Hide Runtime Prompt property is set during runtime prompt design	Hide Prompt option is selected for the form	Result on Runtime Prompt
Use as Override Value is set and Override Value is available or the member is available on the Page/Point of View to use as the runtime prompt value.	Yes	Yes	Yes or No Setting is ignored	The business rule runs without displaying the runtime prompt to users. Instead, the runtime prompt value is taken from the Override Value or Page/Point of View member.
Use as Override Value is set and Override Value is available or the member is available on the Page/Point of View to use as the runtime prompt value.	Yes	No	Yes	If all runtime prompts can be pre-filled from the Override Value or Page/Point of View context and are valid and within limits, the runtime prompts are not displayed. However, if even one runtime prompt value can't be pre-filled from the Override Value or Page/Point of View context, then all runtime prompts display, with values pre-filled wherever possible. All others follow Principles 1 and 3.
Use as Override Value is set and Override Value is available or the member is available on the Page/Point of View to use as the runtime prompt value.	Yes	No	No	The runtime prompt is displayed to users, with values pre-filled from the Override Value or Page/Point of View.
Use as Override Value isn't set and the member isn't available on the Page/Point of View to use as the runtime prompt value.	Yes	Yes	Yes or No Setting is ignored	The business rule displays the runtime prompt to users, with values pre-filled according to Principle 3. For example, the form context can't be passed because the dimension of the runtime prompt is on rows or columns, so the Hide Prompt setting is ignored and the runtime prompt displayed.

Table 24-25 (Cont.) How Member Availability and Other Settings Affect Runtime Prompts

Availability of Override Value and member on the Page/Point of View	Use Members on Form option is selected	Hide Runtime Prompt property is set during runtime prompt design	Hide Prompt option is selected for the form	Result on Runtime Prompt
Use as Override Value isn't set and the member isn't available on the Page/Point of View to use as the runtime prompt value.	Yes	No	Yes	The runtime prompt is displayed to users, with values pre-filled according to Principle 3.
Use as Override Value is set and Override Value is available, and the member isn't available on the Page/Point of View to use as the runtime prompt value.	Yes	No	No	If all runtime prompts can be pre-filled from the Override Value and are valid and within limits, the runtime prompts are not displayed. However, if even one runtime prompt value can't be pre-filled from the Override Value , then all runtime prompts display, with values pre-filled wherever possible. All others follow Principles 1 and 3.
Use as Override Value isn't set and the member isn't available on the Page/Point of View to use as the runtime prompt value.	Yes	No	No	The runtime prompt is displayed to users, with values pre-filled according to Principle 3.
Use as Override Value is set and Override Value is available, and the member isn't available on the Page/Point of View to use as the runtime prompt value.	Yes	No	No	The runtime prompt is displayed to users, with values pre-filled according to Principles 1 and 3.
Use as Override Value is set and Override Value is available or the member is available on the Page/Point of View to use as the runtime prompt value.	No	Yes	Not available	The business rule runs without displaying the runtime prompt to users. Instead, the design-time values are used.
Use as Override Value is set and Override Value is available or the member is available on the Page/Point of View to use as the runtime prompt value.	No	No	Not available	The runtime prompt is displayed to users, with values pre-filled according to Principle 3.
Use as Override Value isn't set and the member isn't available on the Page/Point of View to use as the runtime prompt value.	No	Yes	Not available	The business rule runs without displaying the runtime prompt to users. Instead, the design-time values are used.
Use as Override Value isn't set and the member isn't available on the Page/Point of View to use as the runtime prompt value.	No	No	Not available	The runtime prompt is displayed to users, with values pre-filled according to Principle 3.

When hidden runtime prompt values are ambiguous, note:

- If the form context can't be passed in (because the dimension is on the row or column, for example), hidden runtime prompts are displayed.
- With hidden Cross Dimension runtime prompt types, if all prompts can't be passed in from the Override Value or context, the runtime prompt displays with values pre-filled from **Override Value** or context values and design time values. For example, if the Cross

Dimension has runtime prompts for Period, Entity, and Scenario, and Entity is defined on the row and Scenario has an **Override Value** set, then the runtime prompt displays with the Override Scenario, then design time value for Entity, then Page Period.

- If the **Override Value** is present, or context can be passed in for the runtime prompt value but it's out of limits, then the runtime prompt is displayed with the context value pre-filled.
- If there is more than one runtime prompt of type Member or type Cross Dimension combined, then the runtime prompts are displayed with the **Override Value** or context values pre-filled. For example, if there is a member type runtime prompt for the Entity dimension and a Cross Dimension type runtime prompt with one prompt for the Entity dimension, then both runtime prompts are displayed. This rule doesn't apply to Calculation Manager rulesets.
- When launched from the **Rules** link on the **Navigator** menu, runtime prompts are hidden and the design-time value (overridden at the rule or ruleset level) is used to launch the business rule. If the provided design-time value is out of limits, then the runtime prompt is displayed with the design-time value pre-filled.
- Runtime variables that are hidden during design never use the last saved value. The **Use Last Value** property is ignored, and the values are not saved to the database.

About Runtime Prompts and Approvals Security

Service Administrators can design runtime prompts to honor Approvals security for members. Doing so prevents users from changing data in approval units to which they don't have access, according to Approvals rules. For example, the Service Administrator may not want users to change data after they have promoted the related approval unit. In Calculation Manager, Service Administrators can set runtime **Security** for a member or members:

- **Approvals:** The application allows a user to change member data if both these conditions are true:
 - The user has write access to the members (as assigned in the application).
 - If the members belong to an approval unit, the user owns the approval unit.If both conditions are not met, the user can't change the members' data.
- **Write:** Users launching the business rule who have write access to the members (as assigned in the application) can change its data. The members' Approvals status is ignored.
- **Read:** Users launching the business rule have read access to the members (as assigned in the application). Approvals status is ignored.
- **Use Default:** Security is applied to the runtime prompt only if member access isn't set to None (that is, either read or write).

See [Designing Secure Runtime Prompts](#).

Designing Secure Runtime Prompts

The application supports runtime security on Scenario, Version, Entity, and secondary dimension intersections by relying on the order in which runtime prompts are designed. For the business rule to apply **Approvals** security, the Calculation Manager designer must place runtime prompts for Scenario and Version with Write or Approvals security before the Entity runtime prompt.

Runtime prompts for Version and Scenario members are filtered by write access when **Security** in Calculation Manager is set to either **Approvals** or **Write**. Runtime prompts for Entities with the **Security** set to **Approvals** are filtered according to the last Scenario/Version

that is displayed before the Entity runtime prompt. If either the Scenario or Version runtime prompt doesn't exist, Entities are filtered by write access.

Runtime prompts for other dimensions with **Security** set to **Approvals** are considered to be secondary dimensions and are filtered according to the last Scenario/Version/Entity that displays before that runtime prompt.

So, for runtime prompts using **Approvals** security defined in this order:

Scenario1: Version2: To_Entity1, Scenario2: Version1, To_Entity2, To_Product

Runtime prompts are filtered as follows:

- To_Entity1 is filtered by the combination—Scenario1: Version2
- To_Entity2 is filtered by the combination—Scenario2: Version1
- To_Product is filtered by the combination—Scenario2, Version1, To_Entity2, To_Product

For example:

```
Fix (FY11, Jan, {EntitySalesByCountry}, {MyScenario2}, {MyVersion2})
  Fix ({MyProduct}, {MyCountry})
    {ToAccount} = {FromAccount} * 2;
  ENDFIX
Endfix
```

Note:

If the business rule designer omits an approval unit dimension from the list of runtime prompts (for example, the runtime prompt doesn't include a Scenario or Entity), then Approvals security isn't applied and the hierarchy is filtered by write access.

See [About Runtime Prompts and Approvals Security](#).

Using Groovy Rules

Create rules written in the Groovy scripting language that solve use cases that normal business rules can't solve.

Table 24-26 Where Can I Learn More About Groovy Rules?

Your Goal	Learn More
Learn the benefits of Groovy rules.	About Groovy Business Rules
View examples of business scenarios where Groovy business rules might be used.	Groovy Rule Business Scenarios
Watch videos and complete hands-on tutorials that teach best practices when implementing and using Groovy rules.	<ul style="list-style-type: none"> • Groovy Business Rule Tutorial Videos • Groovy Business Rule Tutorials • Learning Groovy in Oracle EPM Cloud
Create Groovy business rules and a Groovy template using Calculation Manager.	<ul style="list-style-type: none"> • Creating a Groovy Business Rule • Creating a Groovy Template for a Planning BSO Cube

Table 24-26 (Cont.) Where Can I Learn More About Groovy Rules?

Your Goal	Learn More
Connect to the Java APIs used for creating Groovy rules and view example Groovy scripts.	<ul style="list-style-type: none"> • Java API Reference for Groovy Rules • Groovy Business Rule Examples
Edit the script for a Groovy business rule or template using Calculation Manager.	Editing the Script For a Groovy Business Rule or Template
Secure Groovy templates for authorized users.	Assigning Access to Groovy Templates

About Groovy Business Rules

Groovy business rules allow you to design sophisticated rules that solve use cases that normal business rules can't solve; for example, rules to prevent users from saving data on forms if the data value is above a predefined threshold.

Note:

Groovy is an advanced customizable rules framework that comes with EPM Cloud Platform and is available with EPM Enterprise Cloud along with Enterprise PBCS and PBCS Plus One. You can create and edit Groovy rules in:

- Planning (including these application types: Custom, Module, FreeForm, Sales Planning, Strategic Workforce Planning, and Cash Forecasting)
- Enterprise Profitability and Cost Management
- Financial Consolidation and Close
- FreeForm
- Tax Reporting

You create Groovy rules in Calculation Manager and execute them from any place that you can execute a calc script rule in an application; for example, on the Rules page, within the context of a form, in the job scheduler, in dashboards, in task lists, and so on.

Groovy rules are also supported in rulesets. You can have a combination of calc script rules and Groovy rules within a ruleset.

Groovy rules are not supported in composite forms.

You can execute jobs of type rules, rulesets, and templates synchronously from a Groovy rule.

You can write Groovy scripts to run select EPM Automate commands directly in Oracle Enterprise Performance Management Cloud, without installing EPM Automate client on a client machine. Refer to [Running Commands without Installing EPM Automate](#) and [Supported Command](#) in *Working with EPM Automate for Oracle Enterprise Performance Management Cloud* for information on which EPM Automate commands can be run via Groovy and example scripts.

Oracle supports two types of Groovy rules:


- Rules that can dynamically generate calc scripts at runtime based on context other than the runtime prompts and return the calc script which is then executed against Oracle Essbase.

For example, you could create a rule to calculate expenses for projects only for the duration (start and end dates) of the project.

Another example is a trend-based calculation that restricts the calculation to the accounts available on the form. You could use this calculation for various forms in Revenue, Expense, Balance Sheet, and Cash Flow. This allows for optimization and reuse.

- Pure Groovy rules that can, for example, perform data validations and cancel the operation if the data entered violates company policies.

Video

Your Goal	Watch This Video
Learn about training options for creating Groovy rules in Oracle Enterprise Performance Management Cloud.	 Learning Groovy in Oracle EPM Cloud

Java API Reference for Groovy Rules

For Enterprise applications, a Java API Reference is available to use as you create Groovy rules.

The Java API Reference includes examples that demonstrate the syntax and powers of the EPM Groovy object model.

To view the Java API Reference, see the [Java API Reference for Oracle Enterprise Performance Management Cloud Groovy Rules](#) on the [cloud help center](#). You can also access this reference from the Oracle Enterprise Planning and Budgeting Cloud Academy. To access the Academy, sign in, and then click **Academy**.

Groovy Business Rule Examples

Example Groovy scripts are available.

To see example Groovy scripts:

1. See the Java API Reference for Oracle Enterprise Performance Management Cloud Groovy Rules, <http://docs.oracle.com/cloud/latest/epm-common/GROOV/>.
2. Do one of the following:

- Under **Example Groovy Scripts** on the main page, click the word "here" to view sample scripts:

Example Groovy Scripts

The example Groovy scripts provided here demonstrate the syntax and power of the EPM Groovy object model.








- Under **All Classes** in the left pane, click a class to see the examples for that class.

For example, to see Strategic Modeling examples, click the StrategicModel class in the left pane.

Groovy Business Rule Tutorial Videos



Watch these tutorial videos for details and best practices when implementing and using Groovy Business Rules.



Your Goal	Watch this Video
See the training options for creating Groovy rules in Oracle Enterprise Performance Management Cloud:	 Learning Groovy in Oracle EPM Cloud
Push data from a source location to a target location using Groovy rules and Smart Push.	 Moving Modified Data Using Groovy Rules and Smart Push
Generate focused calculation scripts in the business process to calculate only data that has been edited, instead of the entire data entry form.	 Calculating Modified Data Using Groovy Rules
Use Groovy rules to calculate incrementally loaded data in Data Management.	 Calculating Incrementally Loaded Data in Data Management Using Groovy Rules
Use Groovy templates to improve usability and calculation performance for user actions.	 Customizing Actions to Improve Performance Using Groovy Templates

Groovy Business Rule Tutorials





Complete these tutorials for hands-on examples on implementing Groovy Business Rules.


Implement Groovy: Basic Tasks

Your Goal	Learn How
Learn about the Groovy scripting language and how to create a Groovy script for your business process in Oracle Enterprise Performance Management Cloud.	 Introduction to Groovy Business Rules
Implement Groovy scripts to work with data grids and data grid iterators. <ul style="list-style-type: none"> Use conditional logic to set the background colors in a data grid Implement performance benchmarking Set default data values in a grid 	 Working with Data Grids and Iterators in Groovy



Your Goal	Learn How
<p>Create a Groovy script to work with business process metadata, in this case, moving a member from one parent to another. The script includes RTPs to prompt users for input.</p> <p>You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.</p>	 Moving Dimension Members with Groovy
<p>Push data from a source location to a target location using Groovy rules and Smart Push.</p>	 Moving Modified Data Using Groovy and Smart Push

Implement Groovy: Advanced Tasks

Your Goal	Learn How
<p>Implement a Groovy script that validates data entry against allowed ranges stored in a driver cube.</p>	 Validating Data Entry Rules with Groovy
<p>Create a Groovy script to work with business process metadata, in this case, adding a member to a dimension. The script includes RTPs to prompt users for input.</p> <p>You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.</p>	 Adding Dimension Members with Groovy
<p>Generate focused calculation scripts in your business process to calculate only data that has been edited, instead of the entire data entry form.</p>	 Calculating Modified Data Using Groovy
<p>Understand Strategic Modeling concepts and learn how to integrate data between strategic models and business process applications using Groovy scripts.</p>	 Integrating Data between Planning and Strategic Models Using Groovy
<p>Create a Groovy template with interactive Design Time Prompts (DTPs).</p>	 Creating Groovy Templates

Your Goal	Learn How
Learn how to use a Groovy business rule in the business process to export dimension metadata from EPM Cloud, and then import the metadata into the business process.	 Integrating Dimension Metadata from Enterprise Data Management Cloud with Planning Using Groovy Rules

Implement Groovy: REST API

Your Goal	Learn How
Call a Data Management REST API to execute a data load rule that will load the latest product volumes for the user's entity into the business process.	 Calling an Internal REST API Using Groovy
Call an external Rest API from a Groovy script in your business process. You'll also learn how to create a right-click action menu with a menu item to call the script, and how to associate the action menu with a data form.	 Calling an External REST API Using Groovy

Groovy Rule Business Scenarios

This section provides examples of business scenarios where you can use Groovy business rules.

These topics contain scenarios that show you how to use Groovy rules to perform focused data movement and smart calculations on business process data:

- [Moving Modified Data Using Groovy Rules and Smart Push](#)
- [Calculating Modified Data Using Groovy Rules](#)

Moving Modified Data Using Groovy Rules and Smart Push

In this topic, we'll show you best practices on how you can use Groovy rules and Smart Push to move modified data into a reporting cube.

On a data form, users can modify employee salary and assign a Reporting Manager. After the form data is saved, Smart Push is run to copy data to the reporting cube for analysis. Then, dimensions are also consolidated, if necessary, as the data is being copied.

If the form contains hundreds of rows of data, all of that data is checked against the configured data map, processed for dimension consolidation, if any is set, and then pushed to the reporting cube. Depending on the amount of data on your form, this process may take a while to complete.

You can improve the performance of data synchronization between your input and reporting cubes by designing a Groovy rule that identifies and isolates the data you modified, and pushes only the isolated data into your reporting cube.

For example, we configured a simple data map for Smart Push that maps dimension members from our input cube to our reporting cube.

PushCompensationToRepCube

Tap description to edit

Source HP1 Plan2

Target HP1 HP1_ASO

Source Dimension	Target Dimension
Account ILvl0Descendants(Account)	Account
Currency ILvl0Descendants(Currency)	Currency
Employee ILvl0Descendants(Employee)	Employee
Entity ILvl0Descendants(Entity)	Entity
ReportingManager	Manager

Unmapped Dimensions

Then we prepared forms that display data from our input and reporting cubes.

Manage Employee Salary and Reporting Manager

Currency	Scenario	Years	Period	Version	Entity	Employee	Reporting
USD	Current	FY16	Jan	BU Version_1	No Entity	Phone	Manager
No Employee	Grade 1	500	1000	555-1234	no.emp@oracle.c	Jerry R	
Employee 1	Grade 3	7000	650	555-4321	emp1@oracle.co	Jerry R	
Employee 2	Grade 3	6900	620	555-2345	emp2@oracle.co	Elizabeth K	
Employee 3	Grade 1	4200	1000	555-5432	emp3@oracle.co	John S	
Employee 4	Grade 2	5000	500	555-8765	emp4@oracle.co	Elizabeth K	
Employee 5	Grade 3	6000	600	555-9876	emp5@oracle.co	Jerry R	
Employee 6	Grade 1	4000	400	555-1234	emp6@oracle.co	Jerry R	
Employee 7	Grade 2	5200	500	555-1235	emp7@oracle.co	Elizabeth K	
Employee 8	Grade 3	6000	600	555-1236	emp8@oracle.co	John S	
Employee 9	Grade 1	7000	700	555-1237	emp9@oracle.co	Jerry R	
Employee 10	Grade 2	8500	800	555-1238	emp10@oracle.c	Elizabeth K	
Employee 11	Grade 3	9000	900	555-1239	emp11@oracle.c	John S	
Employee 12	Grade 1	10000	1000	555-1240	emp12@oracle.c	Jerry R	
Employee 13	Grade 2	4250	425	555-1241	emp13@oracle.c	Elizabeth K	
Employee 14	Grade 3	5250	525	555-1242	emp14@oracle.c	John S	
Employee 15	Grade 1	6250	625	555-1243	emp15@oracle.c	Jerry R	

Period	Years	Scenario	Version	Currency	Entity	Salary	Bonus
Jan	FY16	Current	BU Version_1	USD	No Entity		
No Employee	Jerry R					500	1000
Employee 1	Jerry R					7000	650
Employee 2	Elizabeth K					6900	620
Employee 3	John S					4200	1000
Employee 4	Elizabeth K					5000	500
Employee 5	Jerry R					6000	600
Employee 6	Jerry R					4000	400
Employee 7	Elizabeth K					5200	500
Employee 8	John S					6000	600
Employee 9	Jerry R					7000	700
Employee 10	Elizabeth K					8500	800
Employee 11	John S					9000	900
Employee 12	Jerry R					10000	1000
Employee 13	Elizabeth K					4250	425
Employee 14	John S					5250	525
Employee 15	Jerry R					6250	625
Employee 16	Elizabeth K					7250	725

The form used for data entry has Smart Push enabled and uses the form's context to push data for all the members selected for the dimensions defined on the form.

Map Reporting Application	Dimension	Use Form Context	Overwrite Selection	Run After Save	Delete
PushCompensationToRepCube	Currency	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Scenario	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Years	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Period	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Version	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Entity	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Employee	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	Account	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

For the Groovy rule, here's the entire script.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = "" + "${employees.join(", ")}"
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n ${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

The script starts by identifying the associated data map for smart push.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = "" + "${employees.join(", ")}"
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n ${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

This section of the script uses the `dataCellIterator` method to identify edited cells and isolates them.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = "" + "${employees.join(", ")}"
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n ${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

Then, this section takes the isolated data and runs the focused data movement using Smart Push and the data map configured and associated with the form. A message displays when modified data is moved to the reporting cube.

```

1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"${employees.join(", ")}\"""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n ${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

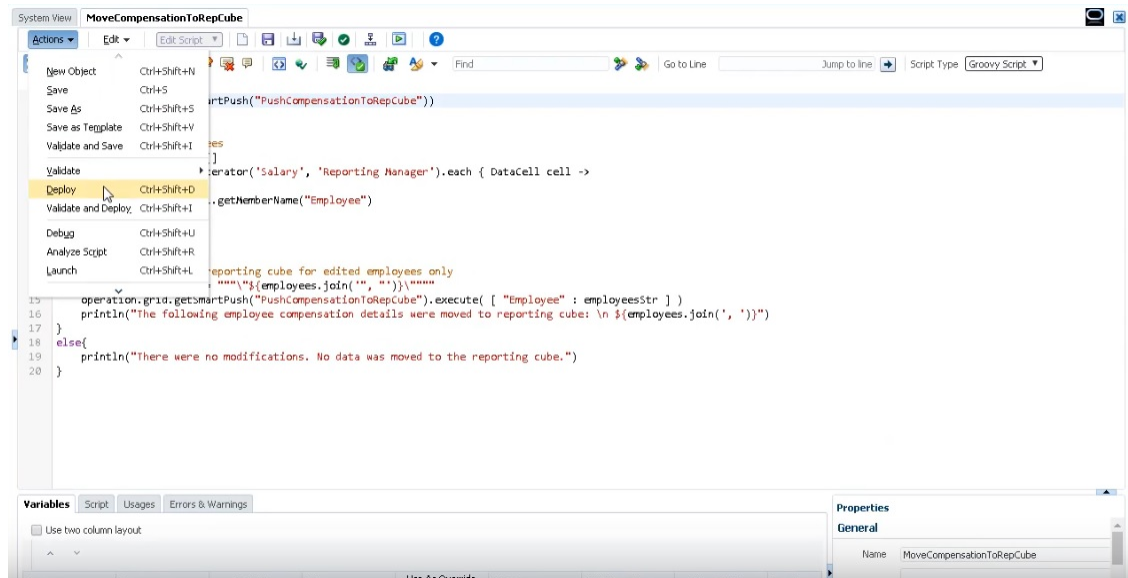
If there are no modifications, a message displays when there are no changes and data was not moved to the reporting cube.

```

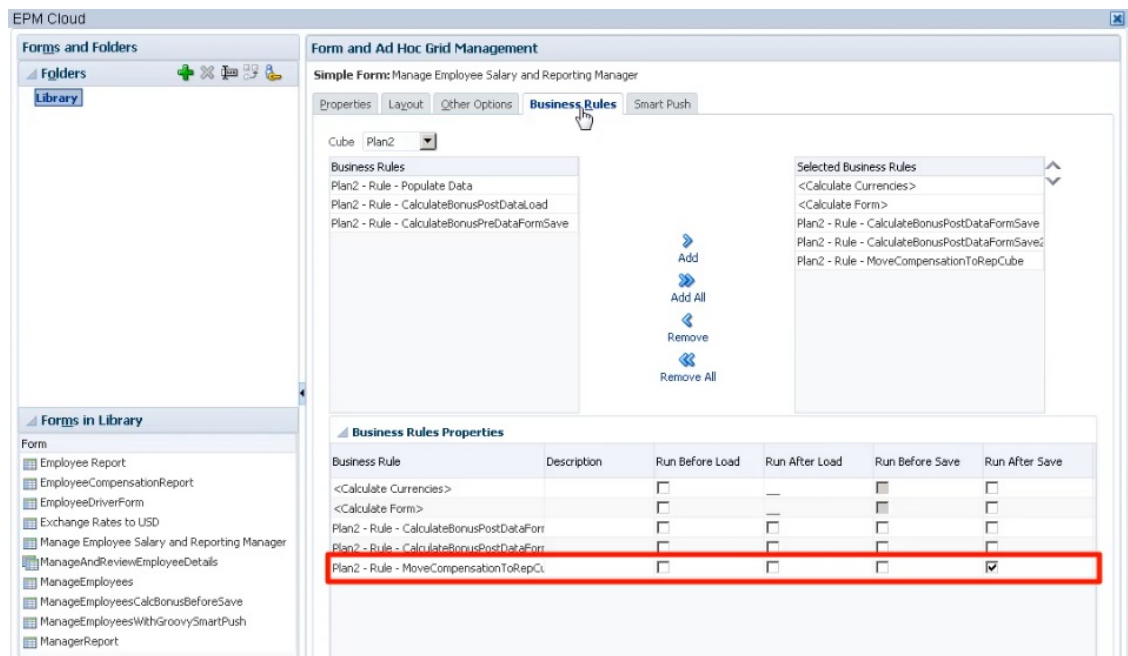
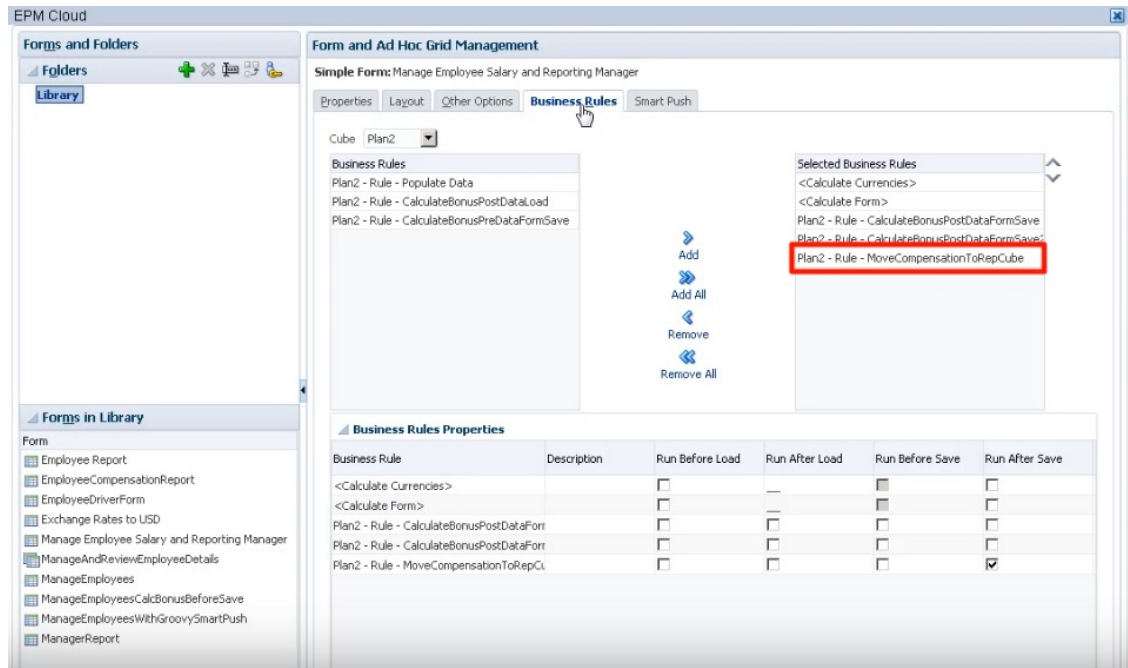
1 if(!operation.grid.hasSmartPush("PushCompensationToRepCube"))
2     return
3
4 // Isolate edited employees
5 Set<String> employees = []
6 operation.grid.dataCellIterator('Salary', 'Reporting Manager').each { DataCell cell ->
7     if(cell.edited) {
8         employees << cell.getMemberName("Employee")
9     }
10 }
11
12 if(employees) {
13     // Push data to the reporting cube for edited employees only
14     String employeesStr = """"${employees.join(", ")}\"""
15     operation.grid.getSmartPush("PushCompensationToRepCube").execute( [ "Employee" : employeesStr ] )
16     println("The following employee compensation details were moved to reporting cube: \n ${employees.join(', ')}")
17 }
18 else{
19     println("There were no modifications. No data was moved to the reporting cube.")
20 }

```

After we created this Groovy rule, we deployed it the same way we deploy business rules.



Then, in form management, associated it with the form. The Groovy rule runs after the form data is saved.



To run the Groovy rule, open the form in **Input Cube**, make some changes, and then click **Save**.

The screenshot shows the Oracle Planning and Budgeting Cloud interface. At the top, it says 'ORACLE Planning and Budgeting Cloud: HP1'. Below that, there's a navigation bar with 'Manage' and 'Data Exchange' buttons. The main content area is titled 'Manage Employee Salary and Reporting Manager'. There's an 'Information' dialog box open, which says 'Messages for this page are listed below.' and 'The data has been saved. Rule was run successfully.' Below the dialog, there's a table with columns: Currency (USD), Scenario (Current), Years (FY16), Period (Jan), Version (BU Version_1), Entity (No Ent), Grade, Salary, Bonus, Employee Phone, Employee Email, and Reporting Manager. The table lists employees from 'No Employee' to 'Employee 15'. A red box highlights a section of the table, and the text 'ISOLATED DATA' is visible in the bottom right corner of the table area.

Once saved, the updated data will display in the reporting cube.

Calculating Modified Data Using Groovy Rules

In this topic, we'll show you how to improve business process calculation performance by using Groovy rules to calculate only the data that's been modified.

After you update data in a form, it needs to be calculated. When you use a business rule to calculate a standard calculation script, all the data for the form is calculated. With large forms or calculations that affect large areas of the database, you might see slower calculation performance.

You can manually calculate one row at a time by right-clicking on the row. This can provide faster calculation performance, but isn't a good option when making changes to multiple rows of data.

Groovy rules can dynamically focus on the cells that you update.

You can use Groovy rules on forms in two ways:

- When you calculate data on save, the Groovy rule generates a calculation script with a FIX statement based on the cells you updated. Then the calculation is run on the server against the modified data instead of all records on the form. As a best practice, use this option with larger forms where you are updating a lot of data.
- When you calculate data before saving, the Groovy rule calculates modified data in memory and displays the results on the form before saving them to the database. As a best practice, use this option when you have a small number of calculations to perform, or when you want to perform complex procedural calculations that are difficult to build into the outline.

In this example, bonus calculations are calculated as a percent of salary.

ManageEmployees i							
Currency	Scenario	Years	Period	Version	Entity		
USD	Current	FY16	Jan	BU Version_1	No Entity		
	Grade	Salary	Bonus	Employee Phone	Employee Email	Reporting Manager	
No Employee	Grade 1	500	50	555-1234	no.emp@oracle.co	Jerry R	
Employee 1	Grade 3	6500	650	555-4321	emp1@oracle.co	John S	
Employee 2	Grade 3	6200	620	555-2345	emp2@oracle.co	Elizabeth K	
Employee 3	Grade 1	4500	450	555-5432	emp3@oracle.co	John S	
Employee 4	Grade 2	5000	500	555-8765	emp4@oracle.co	Elizabeth K	
Employee 5	Grade 3	6000	600	555-9876	emp5@oracle.co	Jerry R	
Employee 6	Grade 1	4000	400	555-1234	emp6@oracle.co	Jerry R	
Employee 7	Grade 2	5000	500	555-1235	emp7@oracle.co	Elizabeth K	

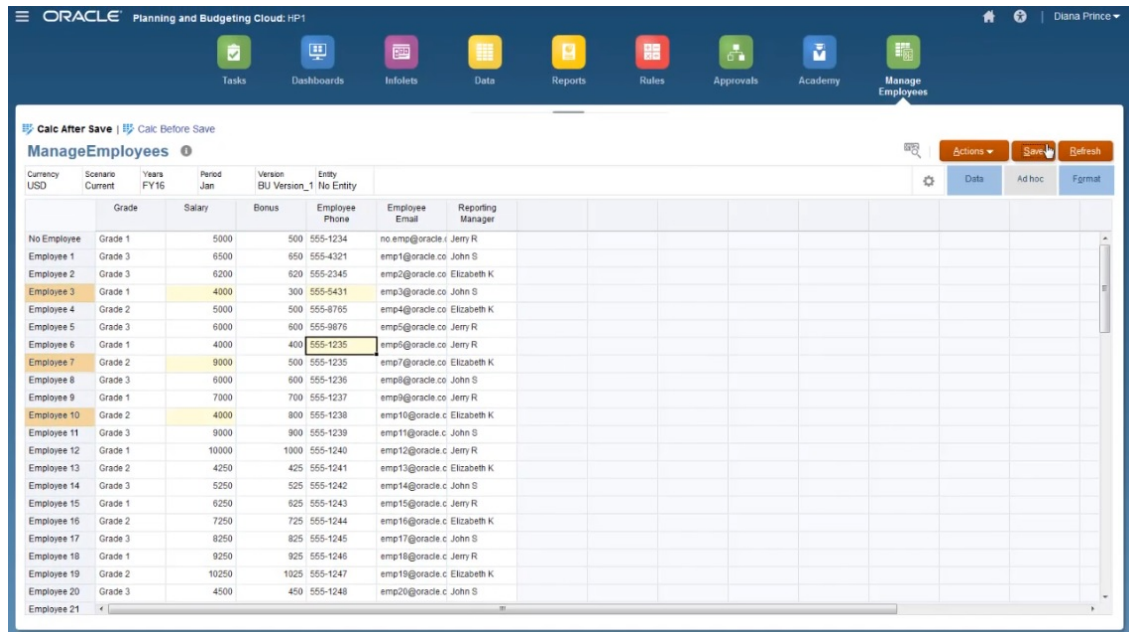
$$\text{Bonus} = \text{Salary} * 0.1$$

Let's look at calculating on save. Notice that this form is defined with a Groovy rule to calculate on save.

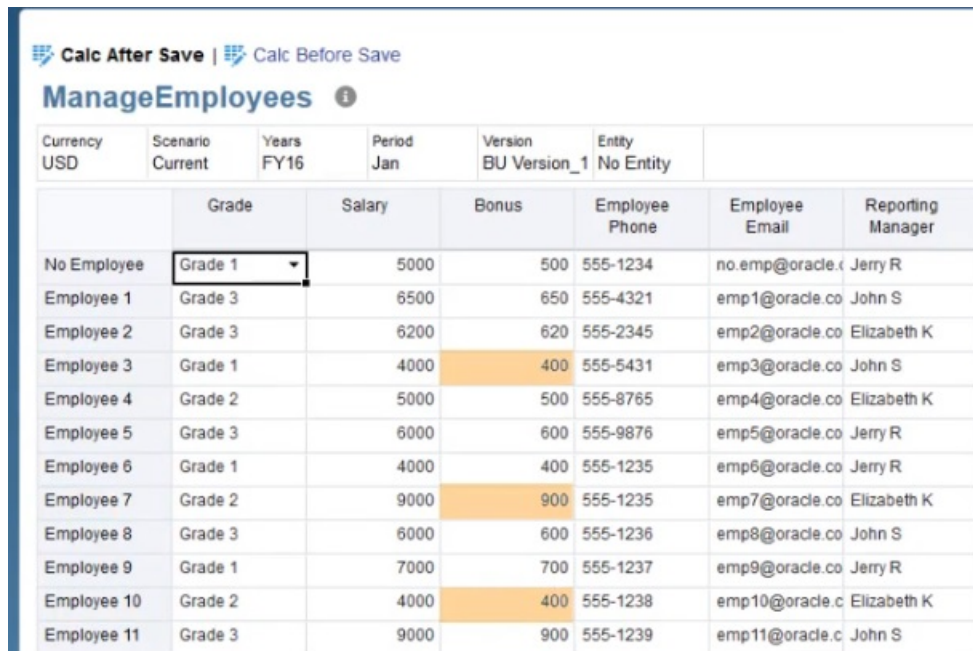
The screenshot displays the Oracle Planning and Budgeting Cloud interface. On the left, the 'ManageEmployees' form is visible, showing a table of employee data with columns for Grade, Salary, Bonus, and Employee Phone. On the right, the 'Form and Ad Hoc Grid Management' window is open, showing the 'Business Rules' configuration for the 'ManageEmployees' form. The 'Business Rules Properties' table is highlighted, showing the following configuration:

Business Rule	Description	Run Before Load	Run After Load	Run Before Save	Run After Save	Use Members on Form	Hide Prompt
<Calculate Currencies>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<Calculate Form>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan2 - Rule - CalculateBonusPostDataFormSave		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

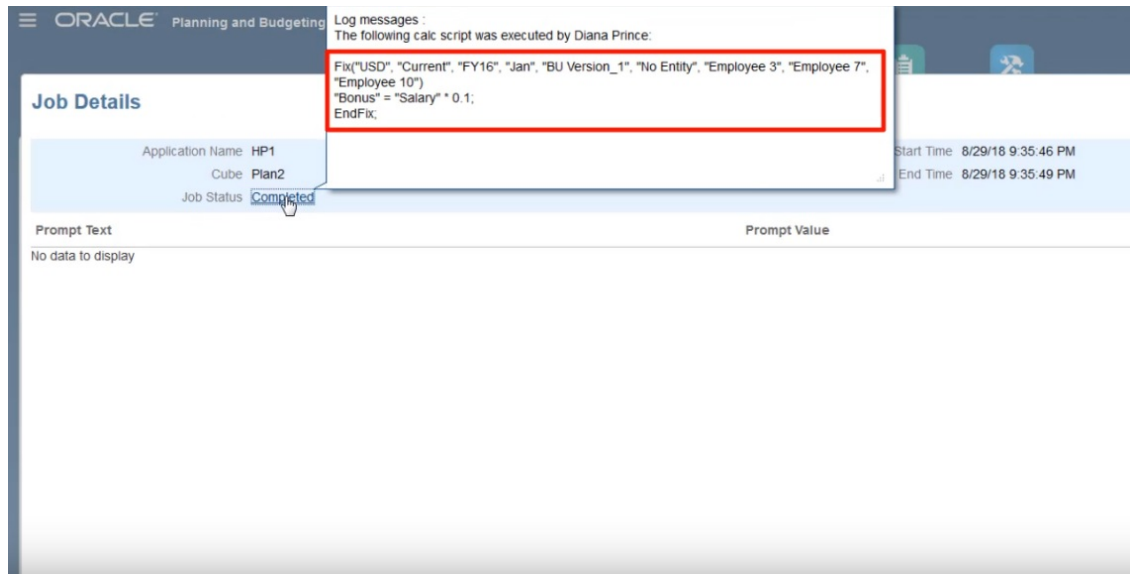
After updating some of the salary data and some of the phone numbers on the form, the phone numbers are saved but don't affect the calculation.



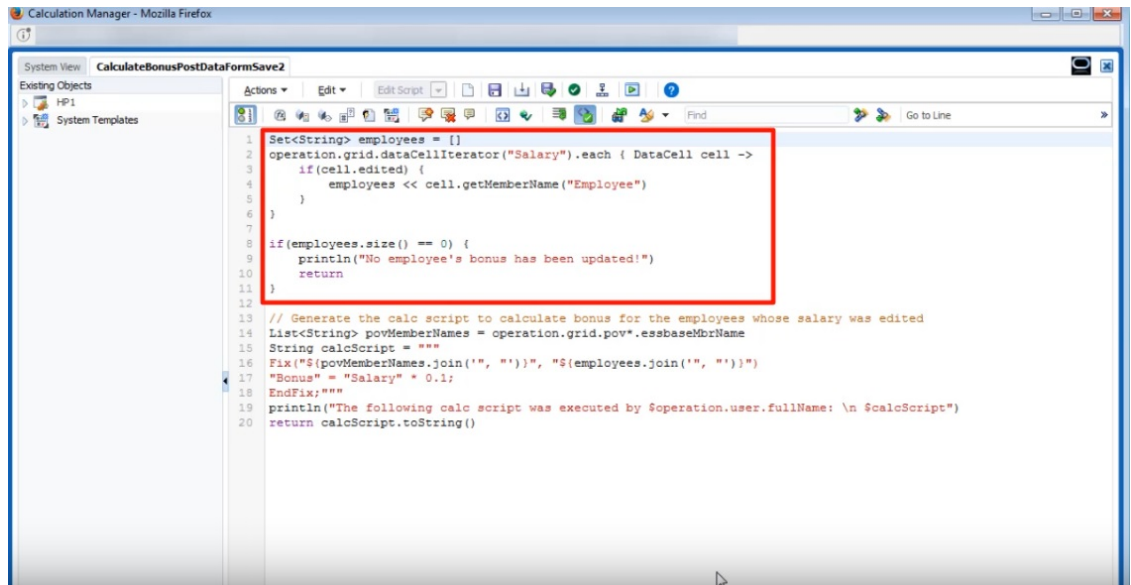
When you save the form to run the associated Groovy rule, the calculated bonus data is displayed on the form.



Viewing the job details, here's the calculation script that the Groovy rule created. Notice that the FIX statement includes only the modified employees.



Let's open Calculation Manager to see the Groovy rule. This first section iterates over the grid in the form to find Salary cells that have been edited and collects the related employee names.



This section generates the calculation script; it finds the POV members from the form, then creates a FIX statement on the POV members and the edited employees.


```

1 Set<String> employees = []
2 operation.grid.dataCellIterator("Salary").each { DataCell cell ->
3     if(cell.edited) {
4         employees << cell.getMemberName("Employee")
5     }
6 }
7
8 if(employees.size() == 0) {
9     println("No employee's bonus has been updated!")
10    return
11 }
12
13 // Generate the calc script to calculate bonus for the employees whose salary was edited
14 List<String> povMemberNames = operation.grid.pov*.esbaseMbrName
15 String calcScript = ""
16 Fix("${povMemberNames.join(", ")}", "${employees.join(", ")}")
17 "Bonus" = "Salary" * 0.1;
18 EndFix;""
19 println("The following calc script was executed by $operation.user.fullName: \n $calcScript")
20 return calcScript.toString()

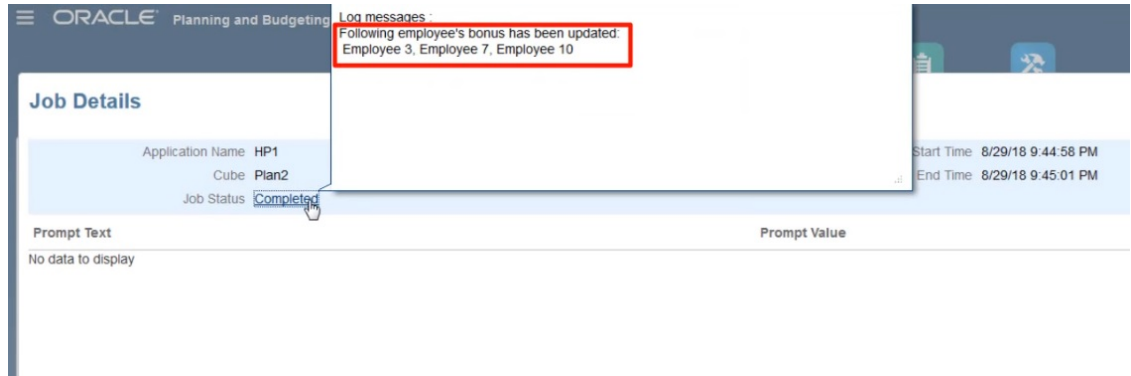
```

Now let's take a look at calculating before save.

This is the same form, but now it's defined with a different Groovy rule to calculate before save.

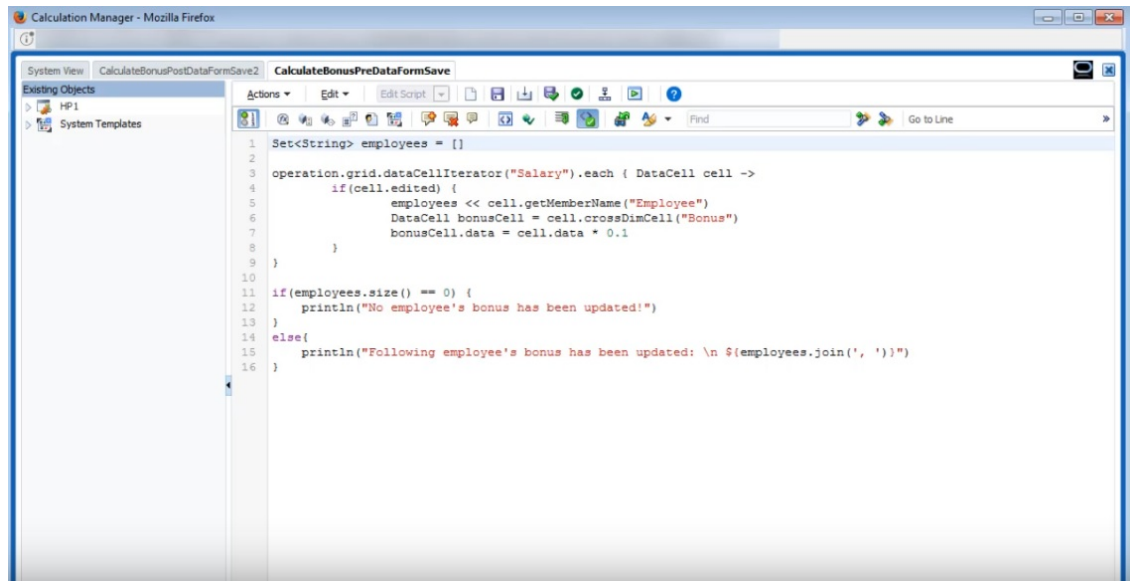
Business Rule	Description	Run Before Load	Run After Load	Run Before Save	Run After Save	Use Members on Form	Hide Prompt
<Calculate Currencies>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<Calculate Form>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan2 - Rule - CalculateBonusPreDataForm		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

After updating the salary data and some of the phone numbers again, save the form to run the associated Groovy rule. The calculated bonus data is displayed on the form, but when you look at the job details, you can see that some of the bonus data was updated, but this time no calculation script was generated.



Open the Groovy rule in Calculation Manager.

Similar to the first rule, the script iterates over the grid in the form to find Salary cells that have been edited and collects the related employee names. Then it calculates bonus data for just the edited employees. Notice that no Oracle Essbase calculation script is generated.



Groovy rules also work with Planning forms in Oracle Smart View for Office. Smart View gives you all the power of Microsoft Excel to make mass adjustments your data, and any Groovy rules for the form set to run before or after saving are executed when you submit data.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1		Grade	Salary	Bonus	Employee Phone	Employee Email	Reporting Manager															
2	No Employee	Grade 1	5000	500	555-1234	no.emp@oracle.com	Jerry R															
3	Employee 1	Grade 3	7150	715	555-4321	emp1@oracle.com	John S															
4	Employee 2	Grade 3	6820	682	555-2345	emp2@oracle.com	Elizabeth K															
5	Employee 3	Grade 1	7500	750	555-5432	emp3@oracle.com	John S															
6	Employee 4	Grade 2	5500	550	555-8765	emp4@oracle.com	Elizabeth K															
7	Employee 5	Grade 3	6000	600	555-9876	emp5@oracle.com	Jerry R															
8	Employee 6	Grade 1	4400	440	555-1234	emp6@oracle.com	Jerry R															
9	Employee 7	Grade 2	8500	850	555-1235	emp7@oracle.com	Elizabeth K															
10	Employee 8	Grade 3	6000	600	555-1236	emp8@oracle.com	John S															
11	Employee 9	Grade 1	7000	700	555-1237	emp9@oracle.com	Jerry R															
12	Employee 10	Grade 2	4500	450	555-1238	emp10@oracle.com	Elizabeth K															
13	Employee 11	Grade 3	9000	900	555-1239	emp11@oracle.com	John S															
14	Employee 12	Grade 1	11000	1100	555-1240	emp12@oracle.com	Jerry R															
15	Employee 13	Grade 2	4250	425	555-1241	emp13@oracle.com	Elizabeth K															
16	Employee 14	Grade 3	5775	578	555-1242	emp14@oracle.com	John S															
17	Employee 15	Grade 1	6250	625	555-1243	emp15@oracle.com	Jerry R															
18	Employee 16	Grade 2	7975	798	555-1244	emp16@oracle.com	Elizabeth K															
19	Employee 17	Grade 3	9075	908	555-1245	emp17@oracle.com	John S															
20	Employee 18	Grade 1	10175	1018	555-1246	emp18@oracle.com	Jerry R															
21	Employee 19	Grade 2	10350	1025	555-1247	emp19@oracle.com	Elizabeth K															
22	Employee 20	Grade 3	4950	495	555-1248	emp20@oracle.com	John S															
23	Employee 21	Grade 1	5500	550	555-1249	emp21@oracle.com	Jerry R															
24	Employee 22	Grade 2	7150	715	555-1250	emp22@oracle.com	Elizabeth K															
25	Employee 23	Grade 3	8250	825	555-1251	emp23@oracle.com	John S															
26	Employee 24	Grade 1	8500	850	555-1252	emp24@oracle.com	Jerry R															
27	Employee 25	Grade 2	9500	950	555-1253	emp25@oracle.com	Elizabeth K															
28	Employee 26	Grade 3	11550	1155	555-1254	emp26@oracle.com	John S															
29	Employee 27	Grade 1	4750	475	867-3329	emp27@oracle.com	Jerry R															

Administering Rules Security

Related Topics



- [Assigning Access to Rules](#)
- [Adding, Editing, and Removing Access to Rules](#)
- [Assigning Access to Groovy Templates](#)

Assigning Access to Rules

Service Administrators can assign access to business rules.

To assign access to Groovy business rule templates, see [Assigning Access to Groovy Templates](#).

To assign access to rules:

1. Click the **Navigator** icon , and then under Create and Manage, click **Rules Security**.
2. Under **Business Rule Folders**, select the folder containing the rules, and then select the rules.
3. Click .
4. Add, edit, or remove access.

See [Adding, Editing, and Removing Access to Rules](#).






Adding, Editing, and Removing Access to Rules

You can specify which users and groups can access the selected rule.

**Note:**

Rulesets inherit launch permissions from the rules included in the ruleset.

To assign, edit, and remove access permissions to rules:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Rules Security**.
2. Under **Business Rule Folders**, select the folder containing the rules, and then select the rules.
3. Click .
4. Perform a task:
 - To add access, click , and then select from the list of available users and groups.
For **Type of Access**:
 - Select **Launch** to allow the selected users and groups to launch the selected rules.
 - Select **No Launch** to prevent the selected users and groups from launching the selected rules.
 - To edit access, click , and then select the applicable **Type of Access**.
 - To remove access, select the users or groups for which to remove access, and then click .

Assigning Access to Groovy Templates

To assign access to Groovy templates:

1. From the Home page, click **Rules**, then **Filter**, and then select a cube and artifact type.
2. Next to the rule or template, click **Permission**, and then click **Assign Permission**.
3. In **Assign Permission**, click **Permission**, and then assign permissions. See [Setting Up Access Permissions](#) for more information.

Administering Smart Lists

Smart Lists are custom drop-down lists that users access from form cells.

Related Topics

- [Working with Smart Lists](#)
- [Synchronizing Smart Lists in Reporting Applications](#)
- [Setting Smart List Properties](#)
- [Defining Smart List Entries](#)
- [Previewing Smart Lists](#)
- [Displaying #MISSING with Smart Lists](#)

Working with Smart Lists

Service Administrators use Smart Lists to create custom drop-down lists that users access from form cells. When clicking in cells whose members are associated with a Smart List (as a member property), users select items from drop-down lists instead of entering data. Users can't type in cells that contain Smart Lists. Smart Lists display in cells as down arrows that expand when users click into the cells.






Perform these tasks to create and administer Smart Lists:

- Define Smart Lists.
- Associate Smart Lists with members.
- Select dimensions for which Smart Lists are displayed.
- Optionally:
 - Use Smart List values in member formulas.
 - Set how #MISSING cells associated with Smart Lists display in forms.
 - Synchronize Smart Lists in reporting applications

Note:

For a Smart List to be viewable in forms, the dimension to which the Smart List type member belongs must be first in the evaluation order. See [Managing Dimensions](#).

To create or work with Smart Lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Smart Lists**.
 2. Perform one action:
 - To create a Smart List, click , and then set Smart List properties. See [Setting Smart List Properties](#).
 - To edit a Smart List, select it, click , and then set Smart List properties. See [Setting Smart List Properties](#).
 - To delete Smart Lists, select them, click , and then click **OK**. Deleting Smart Lists also deletes any associated mappings with dimension members and reporting applications.
- Data cells can display only one Smart List. If multiple Smart Lists intersect at cells, set which one takes precedence.
- **Optional:** Click  to synchronize Smart Lists in a reporting application. See [Synchronizing Smart Lists in Reporting Applications](#).

 **Note:**

When a member in a Smart List is deleted and then added back in again, the new member assumes a new unique ID. Any data that was associated with the deleted member will display as the deleted member's numeric ID.

Synchronizing Smart Lists in Reporting Applications

Synchronizing Smart Lists in reporting applications identifies dimensions in reporting applications to which Smart Lists are mapped, and adds level 0 members of the selected dimensions as new Smart List entries to the selected Smart Lists. To define data maps, see *Defining Data Maps in Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

To synchronize Smart Lists in reporting applications:

1. View the **Smart Lists** listing page.
See [Working with Smart Lists](#).
2. Click the Smart List you want to synchronize, and then select



During synchronization, values from reporting applications in all existing mappings are appended after the last Smart List item in the appropriate Smart list. If a Smart List is mapped to two dimensions, all members from the first mapping are inserted first, and then members from the second mapping are inserted. If a member already exists in a Smart List, it's not added again. Smart List members in the Planning Smart Lists are not deleted, even if the corresponding dimension members on the reporting application are deleted.

 **Note:**

If Account is mapped as Smart List to Dimension, all of the level 0 members in the Account dimension are brought in as Smart List entries when the Smart List is synchronized. For example, Smart Lists may include entries such as HSP_Average and HSP_Ending. If this occurs, delete the extra entries from the Smart List.

3. Click **OK** in the dialog box that says "Smart List Synchronized Successfully."

 **Note:**

Smart List names can't have spaces in them. If you're synchronizing Smart Lists in a reporting application, ensure that any new members don't have spaces in the name.

Setting Smart List Properties

Define Smart List properties on the Properties tab.

**Note:**

For a Smart List to be viewable in forms, the dimension to which the Smart List type member belongs must be first in the evaluation order. See [Managing Dimensions](#).

Table 24-27 Smart List Properties

Property	Description
Smart List	Enter a unique name containing only alphanumeric and underscore characters (for example: Position) and no special characters or spaces. Smart List names can be referenced in formula expressions.
Label	Enter the text to display when the Smart List is selected. Spaces and special characters are allowed.
Display Order	How Smart Lists are sorted in the drop-down list: by ID, Name, or Label
#MISSING Drop-Down Label	Enter a label (for example, "No Justification") to be displayed as an entry in the Smart List whose value is #MISSING. Note the following: <ul style="list-style-type: none"> • It displays as the first selection in the Smart List drop-down, allowing #MISSING as a selection in the form. • When the cell isn't in focus, this label displays only if Drop-Down Setting is selected in the next option. Otherwise, #MISSING or a blank cell is displayed, depending on the Display Missing Values As Blank selection for the form. • #MISSING labels determine only the display of cells with #MISSING data; #MISSING remains the stored value.
#MISSING Form Label	Determines how #MISSING values are represented in cells associated with Smart Lists. Options: <ul style="list-style-type: none"> • Drop-Down Setting: Displays the label set in #MISSING Drop-Down Label. • Form Setting: Displays #MISSING or leaves cells blank, depending on the Display Missing Values As Blank selection for the form. This selection determines what is displayed in the cell when it's not the focus. When the cell is in focus, the Smart List item that is selected from the drop-down is displayed.
Automatically Generate ID	Generate a numeric ID for each Smart List entry. If you don't select this option, you can customize Smart List ID values.
Create from Members	Create a Smart List based on dimension hierarchies. Smart List values are dynamically updated when members are updated. Note that user security for the dimension is honored for Smart Lists created from the dimension's hierarchy.
Member Selection	Manually select the members to use in Smart Lists.

Use the **Entries** tab to define selections on Smart Lists. See [Defining Smart List Entries](#).

Defining Smart List Entries

To define Smart List entries:

1. On the **Entries** tab, define drop-down list items:
 - **For first items only:** enter information into the first row.



- To add an item, click  and enter the information.
- To delete an item, select it and click .
- To edit an entry, change the information in its row:

Table 24-28 Smart List Entries

Entry Property	Description
ID	Unique number that sets the order for the displayed entry. The ID is customizable only if Automatically generate ID isn't selected on the Properties tab.
Name	Unique alphanumeric name containing alphanumeric and underscore characters (for example: Customer_Feedback) and no special characters or spaces
Label	Displayed text for the Smart List entry on the drop-down list (for example: Customer Feedback).

 **Note:**

Items highlighted in red are duplicates.



2. Click **Save**.

Use the **Preview** tab to preview the defined Smart List. See [Previewing Smart Lists](#).

Previewing Smart Lists

Preview the defined Smart List on the **Preview** tab. The tab shows the Smart List as displayed in a drop-down list or a table.

To preview a Smart List:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Smart Lists**.
2. Select a Smart List and click .
3. Click **Save**.

Displaying #MISSING with Smart Lists

Service Administrators set values displayed in Smart Lists and data cells, including the display when no data is in the cell. Cells can display no value, #MISSING, or (for cells associated with Smart Lists) a specified value.

Use these options to control the display of #MISSING when cells are not in focus:

Table 24-29 Display Options for #MISSING

Option	Guideline
Blank	When designing forms, select Display Missing Values as Blank . When setting Smart List properties, select Form Setting .

Table 24-29 (Cont.) Display Options for #MISSING

Option	Guideline
#MISSING	When designing forms, don't select Display Missing Values as Blank . When setting Smart List properties, select Form Setting .
A custom label, such as "No Change"	When setting Smart List properties, enter the custom label in the #MISSING Drop-Down Label field (for example, No Change). Select Drop-Down Setting .

Administering Task Lists

Guide users through the planning process with Task Lists.

Task Lists guide users through the planning process by listing tasks, instructions, and end dates. Service Administrators and Power Users create and manage tasks and task lists.

Note:

During application creation, you were presented with two task flow type options: **Task List** and **EPM Task Manager**. **EPM Task Manager** is the default option for new applications. For information about administering Task Manager, see [Administering Tasks with Task Manager](#).

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal

Learn how to how to design forms and manage task lists.

Learn How

 [Designing Forms and Managing Task Lists in Planning](#)






Related Topics

- [Working with Task Lists](#)
- [Adding Instructions to Task Lists](#)
- [Adding Tasks to Task Lists](#)
- [Editing Task Lists](#)
- [Assigning Access to Task Lists](#)

Working with Task Lists

Task lists organize groups of tasks for users. You must create task lists before creating tasks.

To create and rename task lists:



1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Perform a task:
 - To create a task list, click .
 - To rename a task list, select the task list, then click .
 - To move a task list, select the task list, then click .
 - To remove a task list, select the task list, then click .
3. Click **OK**.

To define the task list, see:

- [Adding Instructions to Task Lists](#)
- [Adding Tasks to Task Lists](#)

Adding Instructions to Task Lists





To add instructions to task lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. For **Task List**, select the task list to modify, and then click .
3. Click the **Instructions** tab.
4. Enter instructions for the task list.
5. Click **Save**, and then click **Close**.

Adding Tasks to Task Lists

You can set completion dates and alerts for tasks that users perform at runtime. You can also set up email messages, for example, to alert users that a task was not completed by its end date. Alert messages are sent after an "alert date" that you set, and are repeated until the end date is reached for a task.

To add tasks to task lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Perform a task:
 - Define a task list by clicking , and then entering a name.
 - Modify a task list to add a new task by selecting it, and then clicking .
3. Click .
4. For **Task**, enter a task name.
5. From **Type**, select the kind of task you're creating and what it should enable users to do. For example, if you're creating a task that enables Service Administrators to modify all dimensions at runtime, select **Dimension Editor**.

Specify the information required for the task type using this table:

Table 24-30 Task Information


Task Type	Action
URL	<p>Opens a specified URL</p> <p>Enter a fully qualified URL to associate with this task, such as <code>http://www.company_name.com</code>, and then go to step 6.</p>
Form	<p>Opens a form</p> <p>Select the form for users to complete, and then go to step 6.</p> <p>Optional: Select Set Page Member Defaults to select the member from each dimension to display as the default when the task is first opened. After you select this option, you can select the members for the page dimensions. The page member defaults apply until a user updates the form and returns to the task in another session. Where page member defaults are set, they override the most recently used settings in each session.</p>
Dashboard	<p>Opens a dashboard</p> <p>Select the dashboard for users to work with, and then go to step 6.</p>
Business Rule	<p>Launches a business rule</p> <p>Perform these tasks:</p> <ul style="list-style-type: none"> • From Cube, select the cube associated with the business rule to execute. • From Business Rules, select the business rule to execute. • Go to step 6.
Manage Approvals	<p>Starts the review process with a specified scenario and version</p> <p>Specify the scenario and version in which the user can start the approvals process, and then go to step 6.</p>
Descriptive	<p>Enables Service Administrators to add a task with no task properties.</p>
Copy Version	<p>Copies the current form's data, including supporting detail, cell text, and cell documents, for the specified source and destination versions</p> <p>Select values for Scenario, Copy From, and Copy To, and then go to step 6.</p> <div style="border: 1px solid #0070C0; padding: 10px; margin-top: 10px;"> <p> Note:</p> <p>Copy Version is not available to Power Users and Users.</p> </div>
Job Console	<p>Opens the Job Console to enable users to view a list of their jobs by type (such as copy data and push data) and by completion status</p> <p>Perform these tasks:</p> <ul style="list-style-type: none"> • In Job Type select the kind of job to be displayed in the console. • In Status, select the status of the task to be displayed in the console. • Go to step 6.
Dimension Editor	<p>Enables Service Administrators to view and modify a dimension at runtime</p> <p>Perform these tasks, and then go to step 6:</p> <ul style="list-style-type: none"> • To enable Service Administrators to view and modify all dimensions, select All from Dimension. • To enable Service Administrators to view and modify a particular dimension, select it.

Table 24-30 (Cont.) Task Information

Task Type	Action
Refresh Application	Enables Service Administrators to refresh the application at runtime to capture recent changes. After enabling, go to step 6.
Import and Export	Enables Service Administrators to import and export data and metadata using flat files. From Load Method , specify what import or export task the user must perform, such as export data to a file or import metadata from a file, and then go to step 6.

 **Note:**



The Security Management, Process Management, and Form Management task types cannot be added to a task list or edited in the Simplified Interface. These task types are accessible only in desktop mode of the application.


The Dashboard task type cannot be added to a task list or edited while in desktop mode. This task type is accessible only in the Simplified Interface.

6. For **Duration**, enter how long you expect it will take to complete the task. Enter a number in the first field and the unit of time in the second field; for example, if you think the task will take two weeks, type 2 in the first field and then in the second field, type a **w** or **W** to select **Week(s)**. Time unit options for the second field are as follows:
 - **Hour(s)**: Type **h** or **H** to select this option.
 - **Day(s)**: Type **d** or **D** to select this option.
 - **Week(s)**: Type **w** or **W** to select this option.
 - **Month(s)**: Type **m** or **M** to select this option.
 - **Year(s)**: Type **y** or **Y** to select this option.


 **Note:**

Unit of time options are not case-sensitive. If the language you are using is not English, these entries are localized. Type the first letter of the localized word and then select the whole word that is displayed.

7. To ensure that the task is started on a certain date and then completed by a certain date, perform these tasks:
 - a. For **Start Date**, click , and then use the calendar to specify the year, month, day, and time by which the task must begin.
 - b. For **End Date**, click , and then use the calendar to specify the year, month, day, and time by which the task should be completed.
To send email messages that prompt users to finish uncompleted tasks, select **Repeat Every**, and then specify how often to send these emails, such as once a day.
8. To send email messages that prompt users that the date by which they must complete the task is approaching, select **Alert**, and then:

- a. Click  to use the calendar to specify the date and time on which to start sending alert reminders.
- b. Click **Repeat Every** and specify the frequency for email reminders.

For example, if a task's end date is June 9 2014 at 5 PM, and you want to remind users once a day starting the week before the task is due, select June 2 2014 at 5 PM, enter 1, and then select Weeks.

9. To make task completion dependent on completing another primary (or parent) task, click  next to **Dependency**, select the primary task, and then click **OK**.

Note:

You cannot make task completion dependent on completing a child task of another primary task. Dependencies across task list hierarchies are not supported when a task has children. For example, consider a case where Task 3 is dependent on Task 2 and Task 4 is, in turn, dependent on Task 3. When Task 3 is incomplete, Task 4 becomes incomplete automatically. However, when Task 2.1 is incomplete, its parent task (Task 2) changes to incomplete, but this is not recursive (Task 3 and Task 4 are not affected).

- Task1
- Task2
 - Task2.1
 - Task2.2
- Task3
- Task4

10. In the **Instructions** pane to the right, enter information that explains how to complete the task. Use the formatting buttons to customize the information. For example, you can modify the font, font size, and layout (as bullet points or numbered steps, for example).
11. Click **Save** and then click **OK**.

Editing Task Lists




Related Topics

- [Editing Tasks](#)
- [Copying and Moving Tasks](#)
- [Moving and Reordering Task Lists](#)
- [Clearing Task Lists](#)
- [Deleting Tasks and Task Lists](#)

Editing Tasks


Use the Edit Task dialog box to modify the type of task, its instructions, the end date and alert date, and email reminder messages.

To edit tasks:


1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Select a task list, and then select .
3. Select a task, and then select .
4. In **Edit Task**:
 - Modify the task name.
 - Select another task type.
 - **Optional**: Modify the values for **Duration**, **Start Date**, **End Date**, Alert, and Dependency options.For descriptions of the various options, see [Adding Tasks to Task Lists](#).
5. For **Task - Instructions**, modify instructions for completing the task.
6. Click **Save**.

Copying and Moving Tasks





To copy or move tasks:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Perform an action:




To copy tasks:

- a. Select a task list, and then select .
- b. Select the task to copy, and then click **Save As**.
- c. Enter the name for the new task list, and then click **OK**.

To move tasks:


- a. Select a task list, then select .
- b. Select a task, and then click .
- c. Select the task that will be a child of another task, and then select .
- d. Select the task that will be the parent task, and then select .
- e. Click **Save**.

To cut and paste tasks:

- a. Select a task list, and then click .
- b. Select a task, and then click .
- c. To move the task to a new position, select the task to appear above it.
- d. Click .
- e. Click **OK**.


Moving and Reordering Task Lists

To move or reorder task lists:



1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.

2. Perform a task:

To move a task list:

- a. Select a task list, and then click .
- b. Select the destination folder.
- c. Click **OK**.

To reorder task lists:




- a. Select a task list.
- b. Click  or .

Clearing Task Lists

After a task list is completed, you can clear the completion status, end dates, and alerts for all tasks within a selected task list. This allows tasks to be reused for a future planning period.




Alerts are enabled only when task lists contains end dates. Clearing task lists disables alerts by clearing the check boxes for end dates. It doesn't delete the dates.


To clear task lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Select the task list you want to clear, and then click .
3. In the **Clear** drop-down list, select an option:
 - **Completion Status:** Clears completion status only
 - **Due Dates and Alerts:** Clears any alerts that are enabled, based on the end date set for the task
 - **Both:** Clears completion status, end dates, and alerts
4. Click .
5. Click **OK**.

Deleting Tasks and Task Lists

To delete tasks and task lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Perform a task:
 - To delete a task, select the task list with the task to delete, and then click . Select the tasks to delete, and then click .

- To delete a task list, select the task list to delete, and then select .
3. Click **OK**.

Assigning Access to Task Lists

You can determine who can view and modify task lists. By default, Service Administrators can manage and assign access permissions for task lists.






Note:

Being assigned to a task list means being able to access and complete tasks in the task list. It doesn't mean being able to assign tasks to someone else.

- [Adding Access to Task Lists](#)
- [Changing and Removing Access to Task Lists](#)



Adding Access to Task Lists

To assign access to task lists:

1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Select the task list to modify.
3. Click .
4. Click .
5. Select the users or groups to access the task list.
 - Click **Users** to display all user names; click **Groups** to display all groups.
 - If there are multiple pages of users and groups, a pagination bar displays at the bottom of the page to help you navigate between the pages and to jump to a specific page.
6. For **Type of Access**, select how users or groups can use the task list:
 - **Assigned**: View and use
 - **Manage**: Modify
 - **Manage and Assign**: View, use, and modify
 - **None**: No access
7. Click **Add**.
8. Click **Close**.


Changing and Removing Access to Task Lists

To change or remove access to task lists:


1. Click the **Navigator** icon , and then under **Create and Manage**, click **Task Lists**.
2. Select the task list to modify, then click .

3. Perform a task:

To change access to task lists:

- a. Select users or groups, and click .
- b. For **Type of Access**, select:
 - **Assigned**: View and use
 - **Manage**: Modify
 - **Manage and Assign**: View, use, and modify
 - **None**: No access
- c. Click **Set**.

To remove access to task lists:

- a. Select the user or group, and click .
 - b. Click **OK**.
- 4. Click Close.**

Enabling Task Manager from within Planning

If you are currently using task lists or if you selected the **Task List** task flow type during application creation, you can enable Task Manager, however there are important considerations that you must review before making this change.

Considerations for Switching to Task Manager

Before enabling Task Manager, review the following considerations:

- After enabling Task Manager, you cannot convert back to task lists.
- You cannot migrate existing tasks and task lists to Task Manager. You must delete your tasks and task lists before enabling Task Manager.
- Enabling Task Manager is only supported if Redwood Experience is enabled.
- You must log out and log in again to see the newly enabled Task Manager.

Deleting Tasks and Task Lists

Existing tasks and task lists cannot be migrated to Task Manager. Any task list artifacts that exist on the system will prevent you from enabling Task Manager, so they must be deleted prior to Task Manager enablement. Back up your application before deleting any tasks and task lists.

See [Deleting Tasks and Task Lists](#).

Enabling Task Manager

If you have no existing tasks and task lists on your system, you can proceed with enabling Task Manager. If you haven't already enabled Redwood Experience, you must do so before enabling Task Manager. You can enable Redwood Experience on the Appearance page. See [Customizing Your Display](#).

To enable Task Manager:

- 1.** On the Home page, click **Application**, and then click **Overview**.

2. From the **Actions** menu, select **Enable Task Manager**.
3. Log out and log in again to see the newly enabled Task Manager.
4. To work with Task Manager, see [Administering Tasks with Task Manager](#).

Clearing Cell Details



You can clear these cell details for a cube: account annotations, supporting detail, cell text, and cell-level documents. For information on creating and viewing account annotations, supporting detail, cell text, and cell-level documents, see *Working with Planning*.

Note:

You can't delete approval unit annotations.

Because this function is for Service Administrators and Power Users, the application assumes that you have full access to details you delete.

To clear cell details:


1. Click the **Navigator** icon , and then under **Actions**, click **Clear Cell Details**.
2. For **Cube**, select a cube.
3. To select all dimensions in the cube, click **Add All Dimensions**.
Select members for the displayed dimensions.
4. Specify the type of information to delete by selecting at least one option from **Clear Options**.
5. Select members for the data intersections:
 - a. In **Dimension**, select at least one dimension with details to delete.
 - b. For displayed dimensions, click . On the **Member Selection** page, make a selection that includes the details to delete.

Note:

For every dimension selected, you must select at least one member. If a dimension isn't selected, the application includes all its members when clearing cell details.

Caution:

To clear exactly the data you want, select at least one Account member and members from all other dimensions. If you don't select at least one Account member, no data is cleared, even if you select the **Yes, set value to #Missing** option. If you don't select members from the other dimensions, all data for the selected Account member is cleared across all other dimensions.

6. **Optional:** To select another dimension so you can select its members, click .
7. Click **Clear**.
A Confirmation page displays your selections.
8. Click **Finish** to proceed, or **Back** to change your selections.
If Clear Cell Details is successful, data is deleted from the cube. If data isn't deleted successfully, a message is displayed. You can also check the log file.
9. **Optional:** To view the execution status of Clear Cell Details and review the information that was deleted, view the Job . See [Managing Jobs](#).
10. To clear cell details for another cube, select another cube in step 2, and repeat the procedure.


Copying Data



You can copy plans from one dimensional intersection to another, including relational data and supporting detail. For example, you can copy *Budget, FY10, Final* to *Forecast, FY11, First Draft*.

Note:

- Selected Copy Data settings are preserved for the current session only.
- Copied dimension members must be present in the selected cubes.
- Data must be copied into cells that can accept data. For example, you can't copy data into read-only or dynamic cells.
- You can copy account annotations, supporting detail, and cell text. You can't copy approval unit annotations.
- You can't use this feature with attributes, so don't select attributes to be copied.
- Because this is an administrative function, the application assumes you have full access to data you copy. You're not prevented from copying to approval units that are approved.
- This feature doesn't calculate data. To perform calculations, such as increasing the forecast by 5%, apply the business rule after copying data.
- For Copy Data to be successful, you must select at least one member for Scenario, Account, Entity, Period, and Version dimensions.
- Copy Data is enabled for block storage and aggregate storage cubes.


To copy data:

1. Click the **Navigator** icon , and then under **Actions**, click **Copy Data**.
2. In **Cube**, select a cube.
Dimensions are displayed for this cube. You can only copy from one cube at a time.
3. In **Copy Data Options**, select the type of information to copy.
4. Under **Static Dimensions**, select the members for the data intersections:

- a. For **Dimension**, select a dimension from which to copy.
 - b. For **Members**, click  to make a selection from which to copy. You can select multiple members. You must select at least one member for Scenario, Account, Entity, Period, and Version dimensions.
5. **Optional:** To add another static dimension to the list, click  and select dimension members.

 **Note:**

To remove a dimension, select **Select Dimension**. The dimension moves to the **Dimensions with Source and Destination** area.

6. In **Dimensions with Source and Destination**, enter dimensions into which to copy data.
- In **Source** and **Destination** click .
7. Click **Copy Data**.
- Data is copied from one intersection to the other. If data isn't copied successfully, a message is displayed. You can also check the log file.
8. To copy data for another cube, select another cube in step 2, and repeat the procedure.

Copying Versions of Data

Copy Versions is a handy feature administrators can use to copy data from one version to another version.

For example, use **Copy Versions** when you want to:


- Quickly create a starting point for a new version of a plan.
- Work with multiple versions of data.
- Create a copy of your data for your records and future analysis. For example, you can compare the baseline version against future versions of data.
- Start a new Approvals cycle based on updated data that reflect new business assumptions. For example, you want to copy some of the data in a Worst Case version to a Best Case version. Similarly, you can create a starting point for subsequent versions. For example, copy your First Pass version to a Second Pass version, and then make your changes to it.

Copy Versions copies the data you select from one bottom-up or target version of a selected scenario to another bottom-up or target version within the same scenario.

 **Note:**

- The **Copy Versions** functionality isn't available to Power Users and Users. Only Service Administrators can use **Copy Versions**.
- Copying a version does not copy data to approved approval units.

To copy a version:

1. Click **Navigator** on the Home page.
2. Under **Actions**, click **Copy Versions**.
3. Select the scenario to copy.
4. In **Copy From**, select the source version to copy data from.
5. In **Copy To**, select the target version to copy data to.
6. Click .
7. Use the arrows to move entities from **Available Entities** to **Selected Entities**.

To copy data successfully, you must select at least one member for the Scenario, Account, Entity, and Version dimensions. **Available Entities** displays the entities (approval units) that you have write permission to and that belong to you. You can copy entities with an Approvals status of **Not Started** or **First Pass**.

8. **Optional:**
 - Click **Copy Comments**.
 - Click **Copy Attachments**.
 - Click **Copy Supporting Detail**.
9. Click **Copy Data**.



Note:

Wait until **Copy Versions** completes before you start something else.

Administering Application Diagnostics

Related Topics

- [About Application Diagnostics](#)
- [Assumptions](#)
- [How Application Diagnostics Works](#)
- [Using Application Diagnostics Graphs](#)
- [Launching Application Diagnostics](#)
- [Modifying Artifacts for Optimal Performance](#)

About Application Diagnostics

Application diagnostics enables Service Administrators, at design-time, to identify and resolve design flaws before an application is placed in production (and on an ongoing basis, as the application evolves with new members and data is added to the application) and used by end users. Service Administrators can use application diagnostics to evaluate the following:

- An entire application
- Types of artifacts such as forms and approval units
- Individual "cherry picked" artifacts

Application diagnostics identifies changes that Service Administrators can make at design-time to resolve artifacts with design flaws, and provides easy access to the editors required to modify them. At runtime, internal processes perform checks that may deny system request if artifacts need to be modified. Application diagnostics evaluates your application and artifacts based on the user a Service Administrator selects. This enables you to determine the potential problems that may occur at runtime given the individual user's variables and security access as part of the analysis.

Assumptions

Oracle can only provide general guidelines about how to design your application and artifacts to ensure reasonable performance. Oracle can't specify precise value ranges for artifacts and operations.

How Application Diagnostics Works

Application diagnostics evaluates applications as follows:

- At design-time: Analyzes the application or specific artifacts in terms of all possible problems that could occur. To determine this worst possible situation, suppression options (such as those used with forms) are ignored. Application diagnostics provides information about how to fix the design flaws it encounters.
- At runtime: Internal governors perform checks that may prevent users from performing particular actions if the design flaws found are not resolved.

Use application diagnostics to analyze the following:

- Block storage cubes
- Dimensions
- Forms
- Standalone business rules
- Approval unit hierarchies
- Reporting mappings
- Export data functionality

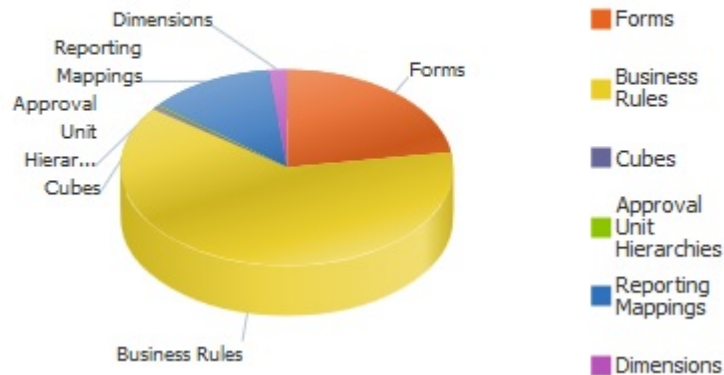
Using Application Diagnostics Graphs

Artifacts that may cause performance issues and that should be modified are yellow, and those that will cause performance issues and must be redesigned are red. Use the pie graphs as follows:

- **<Business Process> Artifacts Distribution** : Depicts how much of your application is comprised of various artifact types. Place your mouse over portions of the graph to view how many artifacts of each type were analyzed by application diagnostics. For example, if you mouse over forms and the pop-up value is 55, then 55 forms were analyzed. Click each portion of the graph to view the compliance status of each artifact type. This displays another pie graph that represents how many artifacts of each type are in acceptable, warning, or error status.

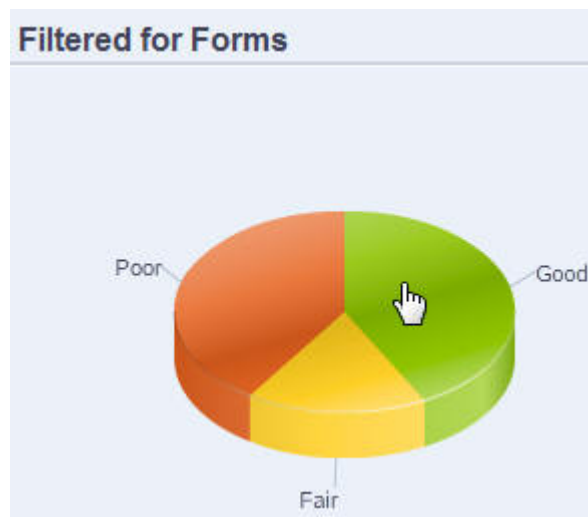
Example Artifact Distribution Graph:

Planning Artifact(s) Distribution






- **Filtered For <Artifact>**: Click the graph portions that represent the artifact status, and to view and drill down on artifacts with a particular status. For example, to view information for only approval unit hierarchies in error status, click the red portion of the graph.


Filtered Graph:



Launching Application Diagnostics



To launch application diagnostics:

1. Click the **Navigator** icon , and then under **Monitor and Explore**, click **Application Diagnostics**.
2. In **Select User**, click  to select the user whose settings you want to use to perform the analysis, and then click .
3. Perform a task:

- A pie graph depicts the distribution of artifacts in the application. The lower grid represents the integrity of all application artifacts. A status of fair and poor indicate artifacts that you should or must modify for optimal performance.
- To analyze specific types of artifacts, such as forms or approval unit hierarchies, select the slice for the type within the pie graph. For example, to ensure that business rules are designed well and will not cause performance issues, click the Business Rules slice of the pie graph. If a large portion of the graph is fair or poor, you should modify your rules. More information about all artifacts of that type display in the grid below.
- To "cherry pick" and analyze one particular artifact, expand **Search** to find the artifact by specifying its name, start date, end date, and type, select the artifact, and then click . Information about the artifact displays in the lower grid.

 **Tip:**

For information about what the pie graphs display and how to drill down to access more information, see [Using Application Diagnostics Graphs](#).

4. Click  or select **Actions**, and then **Run Application Monitor**.
5. If the **View Details** column doesn't display in the grid, select **View**, then **Columns**, and then **View Details**. This also enables you to display or conceal different types of artifact data.
6. To display information about how to fix artifacts, click  in **View Details**. Then click artifacts to launch editors that enable you to modify them.

Modifying Artifacts for Optimal Performance

After reviewing the details provided by the application diagnostics that tell you how to modify your artifacts, edit them as follows:

- Forms: Clicking on the form artifact name launches the **Form Designer** in a new tab. Edit forms as described in [Administering Forms](#).
- Business Rules: Clicking a business rule name launches the **System View** which displays all application artifacts that you can access. You can perform tasks such as:
 - Use the upper **Rule Designer** to view the individual components of the rule, such as conditions, commands, and scripts. Click each component to modify them in the lower portion of the page. You can also insert and remove components like formulas, system templates, and scripts by dragging and dropping them from the **Rule Pallet** and **Existing Object** panes to the left.
 - From **Designer**, select **Edit Script** to modify and format the script by performing tasks such as inserting functions, editing templates, inserting variables, inserting member ranges, use comments, and validate syntax.
 - Create, open, delete, and refresh artifacts, pages, and other documents.
 - Import and export business rules and other objects.
 - Determine how and where artifacts are used.

See *Designing with Calculation Manager for Oracle Enterprise Performance Management Cloud* and [Understanding Runtime Prompts](#).

- Approval unit hierarchies: Clicking an approval unit hierarchy artifact name launches the **Approval Unit Hierarchy Designer** in a new tab. Edit approval units as described in [Creating Approval Unit Hierarchies](#).
- Cubes: Clicking the cube artifact name launches the **Performance Settings** tab of the dimension editor in a new tab. Edit the dimensional outline or dimensional sparsity as described in [Editing Dimensions in the Simplified Dimension Editor](#).
- Reporting Mappings: Clicking the reporting mapping artifact name launches the **Report Mapping Designer** in a new tab. Edit reporting mappings as described in Defining Data Maps in *Administering Data Integration for Oracle Enterprise Performance Management Cloud*.

Managing Approvals

Manage the approvals process by creating approval units, setting the promotional path, tracking budgets, and reviewing status, process issues, and ownership.

Related Topics

- [About the Approvals Process](#)
- [Defining the Approvals Process](#)
- [Starting and Supporting the Review Process](#)
- [Managing Submission Phases with Approval Groups](#)
- [Printing Approval Unit Annotations](#)
- [Creating Approval Status Reports](#)
- [Approval Unit Promotional Path](#)
- [Managing Approval Unit Hierarchies](#)

About the Approvals Process

You can track budgets and review status, process issues, and approval unit ownership using approval units. Budget cycle time is reduced:



- Approval path is independent of organizational structure
- Exceptions and problem areas are highlighted
- Audit information includes annotations and process status
- Reviews include annotations and comments

Videos

Your Goal	Watch This Video
Learn how to set up approvals in Planning.	 Overview: Setting up for Approvals in Enterprise or Planning and Budgeting Cloud

Tutorials

Tutorials provide instructions with sequenced videos and documentation to help you learn a topic.

Your Goal	Learn How
Learn how to manage approvals in Planning.	 Managing Approvals in Planning
Choose a budget preparation method for preparing plans: bottom-up or top-down.	 Performing Top Down and Bottom Up Planning

Related Topics

- [About Approval Units](#)
- [Approvals Process](#)
- [Data Validation Rules](#)
- [Task Lists](#)
- [Setting Up Email for Approvals Notification](#)

About Approval Units

An approval unit is the basic unit for preparing, annotating, reviewing, and approving plan data. Approval units are combinations of scenario, version, and entity or part of an entity. You can have one scenario/version combination per approval unit. Scenarios and versions are the basis of the review cycle. Approval units submit planning data for a scenario and version. For example, an approval unit might consist of a version (Best Case), a scenario (Forecast), and an entity (New York). Approval units can also include secondary dimensions within any entity, refining the granularity of an approval unit.

Approvals Process

The approval unit moves from one reviewer to another until the budget process is complete. The review process follows the promotional path you set up when you select the owner and reviewers for an approval unit, unless an event triggers a change in the promotional path. Events that affect the promotional path include:

- Exceeding or not reaching expense boundaries for budget items such as salaries, new hires or capital equipment
- The current owner returning the budget to the previous owner for additional information
- The current owner requesting help from an authorized user who isn't necessarily on the promotional path

The selected approvals template determines the first user to review the budget (see [Setting Approval Unit Hierarchy Name, Scope, and Template](#)). The first user completes the assigned tasks, then promotes (Bottom Up template) or submits (Distribute template) the budget, which alerts the next owner that the budget requires their attention. Other users may also be notified whenever the budget passes from one user to another.

Each reviewer must validate the approval unit before sending the budget to the next reviewer. The validation runs all data validation rules defined for the approval unit with which the reviewer is working, and reports any data errors or changes in the approval unit promotional path. See [Modifying the Approval Unit Promotional Path](#).

 **Tip:**

To display users' full names (instead of their user IDs) in Approvals, select the option **Display Users' Full Names**, as described in [What Application and System Settings Can I Specify?](#)

Data Validation Rules

To implement business policies and practices, Service Administrators can build data validation rules that are checked when conditions are met in forms. Rules can generate validation messages, enforce limits on submitted approval unit data, and designate a specific reviewer or owner to review data that meets some condition.

For example:

- Conditionalizing the approval unit promotional path
- Preventing the promotion of approval units that include invalid data

When you design rules that affect the approval unit promotional path, you need to understand the order in which these rules are evaluated and applied. For information about designing data validation rules and expected outcomes, see [Managing Data Validation](#).

Task Lists

Task lists guide users through the business process by listing tasks, instructions, and end dates. Service Administrators and Power Users create and manage tasks and task lists. See [Administering Task Lists](#).

Setting Up Email for Approvals Notification

Owners and reviewers must enable approvals notifications if they want to get an email notice when there's a change in approvals status or approvals ownership. Approvals notifications are enabled on the **User Preferences** page.

Approvals notification emails contain the following information:

- URL to Check Status
- Application Name
- Approval unit
- Current Owner
- Previous Owner
- Last Action
- Current Status
- Time
- Annotation Title
- Annotation Text

To enable approvals notifications:

1. From the home page, click **Tools**, and then click **User Preferences**.

2. Select **Notifications**, then enter your email address, select **Approvals**, and then click **Save**.

See also, [Managing Application and System Settings](#).

Defining the Approvals Process

Related Topics

- [Budget Process](#)
- [Approval Operations and Data Validations](#)

Budget Process

The application supports bottom-up, distributed, or free-form budgeting. Typically, high-level users start the approval units containing loaded data, and then delegate data entry into the lowest-level members to their direct reports, who distribute to their direct reports, and so on. Until a budget is distributed, users can't access it.

To define the budget process, Service Administrators define:

- Approval unit hierarchies
- Owners and reviewers of the approval unit hierarchies
- Validation rules for evaluating submitted data

When a user submits budget data, the data is subjected to validation rules. If the data passes the validations, the budget is promoted to the next owner, and the original user can't edit the data unless ownership is granted again. The submission process locks the data from being edited by anyone except the current owner.

Approval Operations and Data Validations

During approvals operations that invoke data validations, user variables and context user variables on the forms that are replaced with the distinct union of the result sets of all possible inputs. User variables and context user variables on the POV will be treated as a page.

Note:


To view the results of the user variable substitution, navigate to the data validation report task list. You may need to purposely cause a validation to fail on the form and then run a validation operation for the approval unit for it to display on the report.

Starting and Supporting the Review Process

After Service Administrators start the review process, the approval unit moves from one reviewer to another until the budget process is complete. The selected approvals template determines the first user to review the budget.

You can view and provide detailed status of the approval process using approval status reports. See [Creating Approval Status Reports](#).

To start the review process:

1. Click the Navigator icon , and then under **Workflow**, click **Manage Approvals**.
2. In **Scenario**, select a scenario.
3. In **Version**, select a version.
4. Click **Go** to display the approval units associated with the selected scenario and version combination.

The approval units displayed are enabled for approvals.

If no approval units are started with the selected scenario and version, this message is displayed: **You have not assigned Approval Unit Hierarchy to the selected Scenario and Version combination.**

5. In the upper-right corner of the page for **View**, select **Tree View**, and then in **Plan Cycle**, click **Start** to begin the review process.

 **Note:**

If the approval unit hierarchy uses the Bottom Up template, selecting **Start** starts the approval unit and runs the Originate action. These actions set the user defined as the approval unit owner in the approval unit hierarchy as the current owner, and the approval unit status changes to **Under Review**.

6. **Optional:** Select **Exclude** to remove an approval unit from the review process or from being tracked in the system.

 **Caution:**

After you exclude an approval unit, all associated annotations and history are discarded. Approval unit status is returned to **Not Started** and the owner is set to **No Owner**. Data values are retained.

Managing Submission Phases with Approval Groups

Create approval groups to divide approval units into more granular subsets of data which can then be submitted for approval in phases.

Related Topics

- [Understanding Approval Groups](#)
- [Defining Approval Groups](#)
- [Approval Group Anchor and Nonanchor Dimensions](#)
- [Editing, Duplicating, and Deleting Approval Groups](#)
- [Assigning Approval Groups to an Approval Unit Hierarchy](#)

Understanding Approval Groups

Approval groups enable you to submit a portion of the data for review first, while other data can be reviewed later. During the review process, you can promote each phase of the approval unit rather than the entire approval unit.

For example, your review process requirements may vary by period. The monthly close cycle might require a single-phase review process for Balance Sheet and Profit/Loss data in January and February. For a quarterly month such as March, the quarterly closing review process may require multiple phased submission cycles for Balance Sheet and Profit/Loss data and supplemental data.

Further, your review process requirements may also vary by scenario. For example, the Actual scenario might require only Balance Sheet and Profit/Loss accounts to be submitted for review. For the Budget scenario, all accounts might be required, and for the Forecast scenario, only Profit/Loss accounts and supplemental data might be required.


Phased submission using approval groups will enable you to meet these different approvals requirements without the need for additional scenarios.

There are no limits on the number of approval groups you can create for an application, however we do limit the number of approval groups you can assign to an approval unit hierarchy to 20.

You perform these tasks to set up submission phases with approval groups:

1. Define approval groups and assign approval groups to dimension members. See [Defining Approval Groups](#).
2. Assign approval groups to an approval unit hierarchy. See [Assigning Approval Groups to an Approval Unit Hierarchy](#).



Videos



Your Goal	Watch This Video
Learn how to set up approval groups and manage approvals with approval groups. You can manage approvals with approval groups in Planning and Financial Consolidation and Close. In this tutorial, you see how to manage approvals with approval groups in Planning.	 Managing Approvals with Approval Groups in Cloud EPM


Defining Approval Groups

Administrators define approval groups for their business processes in the **Approval Groups** card within the **Application** cluster

To define approval groups:

1. From the Home page, click **Application**, and then click **Approval Groups**.
2. Create the approval group:
 - a. Click **Create**.
 - b. Enter a name and an optional description for the new approval group.
 - c. To select the anchor dimension for the approval group, click **Add Dimension** or click  next to **Select Anchor Dimension**, and select a dimension from the list.
For an explanation of anchor dimensions, see [Approval Group Anchor and Nonanchor Dimensions](#).
 - d. **Optional:** By default, the anchor dimension members that are not specified in the approval group rule are marked valid. To clear this option, click  next to the anchor dimension, and then click **Unselected members are valid**.

- e. To select additional dimensions (called nonanchor dimensions), click **Add Dimension**.
 - f. **Optional:** By default, nonanchor dimensions are not required. To make a nonanchor dimension required, click  next to the nonanchor dimension, and click **Required**.
3. Define the approval group rule:
- a. Click **Add Rule**.
 - b. To select the range of members to include, exclude, or remove in the application group, click  next to the dimensions in the new rule:
 - Click **Edit** to open the **Select Members** page and select the members, substitution variables, and attributes to include in the application group rule. See [Using the Member Selector](#).
 - Click **Add Exclusion** to define an exclusion in the rule. You can exclude a subset of what is included for that dimension.
 - Click **Clear** to clear the selection.

To delete a rule, click .
4. Click **Save and Close**.

The new approval group is added to the end of the approval group list. To reorder the rules in a group, click **...** next to the application group, and then select **Move Up** or **Move Down**.



Tip:

You can also drag approval groups to move them up and down in the list.

Approval Group Anchor and Nonanchor Dimensions

Anchor and nonanchor dimensions:

- Anchor dimensions are always required dimensions in the cube that is used in the approval group evaluation.
- Nonanchor dimensions are either required or not:
 - If a nonanchor dimension is required, any cube that doesn't use that dimension will ignore any approval group where that dimension is tagged as required as it evaluates the approval groups.
 - If a nonanchor dimension isn't required, any cube that doesn't use that dimension will still evaluate any approval group that includes that dimension as not required and evaluate the groups of any other dimensions in the approval group in use in the cube.
- Unselected anchor dimension members are valid by default, but you can mark them invalid by clearing the **Unselected Members are Valid** option. This option marks all groups with anchor dimension members not selected in this rule as invalid.

Editing, Duplicating, and Deleting Approval Groups

You can edit an approval group definition, even if it's assigned to an approval unit hierarchy. During the approval process, the latest approval group definition will be applied and validated.

If an approval group is assigned to an approval unit hierarchy and it's edited, when saved, the system will display a warning message informing you that the approval group is assigned and the modified definition will be used for any subsequent approval process activity.

You cannot delete an approval group if it's assigned to an approval unit hierarchy.

To edit, delete, or duplicate an approval group definition:

1. From the Home page, click **Application**, and then click **Approval Groups**.
2. Click **•••** next to an approval group, and then select **Edit**, **Duplicate**, or **Delete**.
3. If you edit an approval group definition that is used in an approval unit hierarchy, the affected approval unit hierarchy must be synchronized with the changes. See [Synchronizing Approval Unit Hierarchies](#).

Assigning Approval Groups to an Approval Unit Hierarchy



You can assign existing approval groups to the hierarchy and set their order on the **Assign Approval Groups** tab. You can also create approval groups from the **Assign Approval Groups** tab if no approval groups exist.




You can assign up to 20 approval groups to an approval unit hierarchy.

Note:

The options described in this topic are for assigning approval groups to an approval unit hierarchy. For complete details about all of the options on the **Approvals Dimension** tab including options for defining primary and secondary dimension members, see [Setting Approval Unit Hierarchy Name, Scope, and Template](#).

To assign approval groups to an approval unit hierarchy:

1. Create an approval unit hierarchy. See [Creating Approval Unit Hierarchies](#).
2. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
3. Complete the **Approvals Dimension** tab details:
 - For **Extended Approval Flow**, select **Approval Group**.
 - To apply the **Approval Group** option to all levels in the approval unit hierarchy, select **Extended Approval Flow Apply at All Levels**.
 - To require the approval workflow to be submitted in phases based on the order of entries you define on the **Assign Approval Groups** tab, select **Phase Dependency**.
Phase dependency means the first entry in the list on the **Assign Approval Groups** tab must be promoted before the second entry. Note that both entries can be at the same level, but the second entry cannot be promoted before the first entry. Hence the order of the entries is important. You can rearrange the order using the up and down arrows. See [step 4](#).
4. Assign approval groups to the hierarchy and set their order on the **Assign Approval Groups** tab:
 - a. Create approval groups or select existing approval groups:
 - To create an approval group, click , and then see [Defining Approval Groups](#).

- To select an existing approval group, click , and then either select the approval groups you want to add, or click **All**.
 - b. To reorder the approval groups in the list, select a group and click  or . If the **Phase Dependency** option was selected on the previous tab, you must arrange the groups in the order you want to promote them.
5. Select approval unit hierarchy members on the **Select Primary Members** tab. See [Selecting Approval Unit Hierarchy Members](#).
 6. Assign approval unit ownership on the **Assign Owners** tab. See [Assigning Approval Unit Owners and Reviewers](#).

 **Note:**

On the **Assign Owners** tab, the approval groups that are selected will display next to the Entity name; for example, Sales East: Revenue Accounts (where Sales East is the Entity and Revenue Accounts is the name of the approval group that was created).

7. Assign approval unit hierarchies to the scenario and version combinations included in the budget process. See [Assigning Approval Unit Hierarchy Scenario and Version Combinations](#).

 **Note:**

If you've entered information in the **Assign Approval Groups** tab and then you change the **Extended Approval Flow** option to something other than the **Approval Group** option, the **Assign Approval Groups** tab will be hidden. However, the system won't discard the information that was entered until you click **Save** or **Cancel**.




For example, if you add Group A, Group B, and Group C information to the **Assign Approval Groups** tab, and then change the **Extended Approval Flow** option from **Approval Group** to **None**, if you click **Save** or **Cancel**, the system will discard the approval group information.

However, if you change the **Extended Approval Flow** option from **Approval Group** to **None** and then subsequently select **Approval Group** again before saving, then the information that was entered in the **Assign Approval Groups** tab is retained so that you need not start all over again. Clicking **Save** or **Cancel** discards any information that is not applicable.

Printing Approval Unit Annotations

Service Administrators can check approval unit status by reporting on annotations for a set of scenarios, versions, and approval unit members. Reports can be based on process status. The application name, selected scenarios, versions, and entities, approval unit title, status, author, origin date, and annotations are displayed. Annotation text displays chronologically, with the most recent entry first.

To create and print reports for approval unit annotations:

1. Click the Navigator icon , and then under **Monitor and Explore**, click **System Reports**.
2. Select **Approval Unit**, and then click **Annotations**.
3. Under **Select Report Options**, select the **Scenario**, **Version**, and **Entity** combination for which you want to generate a report. If **Custom** is selected, click  to select the custom scenarios, versions, and entities.
4. Under **Approvals Status**, select status states.
5. Click **Create Report**.
6. Click **Print**  on the Adobe Acrobat toolbar.

Creating Approval Status Reports

You can view detailed status of the approval process using approval status reports. All users can access this report, however you'll see only the approval units that you have write access to.

Filters allow you to generate more focused reports. You can filter by:

- **Approval Status**
- **Scenario**
- **Version**
- **Approval Unit Hierarchy**
- **Current Location's Generation**
- **Approval Groups**

Approvals status reports provide the following information:

- **Approval Unit**
- **Parent**
- **Status**
- **Sub-Status**

Note:

Sub-status tracks failures that occur while performing actions on the approval unit. Typically failures can include lack of security access, validation rule failures, or other system failures that prevent the action from being completed successfully.

- **Previous Owner**
- **Current Owner**
- **Next Owner**
- **Current Location**
- **Total Value**

- **Last Status Change Date**



Approval Status Report

Scenario: Plan



Version: Final

Approval Unit	Parent	Status	Sub-Status	Previous Owner	Current Owner	Next Owner	Current Location	Current Location's Generation	Total Value	Last Status Change Date
International Sales	Sales	Not Signed Off	No Additional Approval Required	Ramana Prerepa	Ramana Prerepa	Ramana Prerepa	International Sales	3		11/30/20 10:08 PM
Sales East	Sales	Frozen		Ramana Prerepa	Ramana Prerepa	Ramana Prerepa	Sales East	3		12/1/20 12:17 AM
Sales NorthEast	Sales	Under Review			Ramana Prerepa	Ramana Prerepa	Sales NorthEast	3		11/30/20 10:05 PM
Sales Mid-Atlantic	Sales	Under Review			Ramana Prerepa	Ramana Prerepa	Sales Mid-Atlantic	3		11/30/20 10:05 PM
Sales SouthEast	Sales	Under Review			Ramana Prerepa	Ramana Prerepa	Sales SouthEast	3		11/30/20 10:05 PM
Sales South	Sales	Under Review			Ramana Prerepa	Ramana Prerepa	Sales South	3		11/30/20 10:05 PM
Sales Central	Sales	Under Review		Ramana Prerepa	Ramana Prerepa		Sales	2		12/1/20 12:42 AM
Sales West	Sales	Under Review			Ramana Prerepa	Ramana Prerepa	Sales West	3		11/30/20 10:05 PM

You can generate approval status reports in the following formats:

- XLSX (Excel)
- PDF
- HTML
- XML

To create approval status reports:

1. Click the Navigator icon , and then under **Monitor and Explore**, click **System Reports**.
2. Click **Approval Unit**, and then click **Approval Status**.
3. Make your selections:
 - Under **Select Approval Status**, select the states you'd like to view in the report or select **All**.
 - Under **Filters**, select a **Scenario** and then choose the following options:
 - **Version:** Click  to open the **Member Selection** dialog and make your selections.
 - **Approval Unit Hierarchy:** This optional filter adds a subset of an approval unit hierarchy.
 - **Current Location's Generation:** This option adds all members of that generation to the report. You can enter generation numbers, generation ranges, or both separated by commas; for example, 1,4,6-9.
 - **Approval Groups:** This option displays the approval groups you select in the report.
 - Under **Select Format**, choose a file format (XLSX, PDF, HTML, or XML).
4. Click **Create Report** and select where to save the report.

Approval Unit Promotional Path

An approval unit moves from person to person and department to department based on the owners and reviewers you assign to each approval unit and its parents in the approval unit hierarchy.


There are two ways to affect the promotional path of an approval unit hierarchy:



- Modify owners and reviewers for approval units and their descendants using approvals actions (for example, Promote or Reject)
- Use data validation rules to determine whether a change in the approval unit promotional path is necessary
- [Modifying the Approval Unit Promotional Path](#)
- [Design Considerations for Approval Unit Promotional Path Data Validation Rules](#)

Modifying the Approval Unit Promotional Path



When you select an owner and reviewers for an approval unit and its parents, you set the approval unit promotional path (see [Approval Unit Promotional Path](#)). Sometimes, however, budget calculation results change the person who reviews the budget next. For example, if salaries for a sales group are more than 10% over the previous budget year, approval from someone other than the next reviewer may be required. To automate redirecting the budget in these cases, add conditions and actions to data validation rules that test for these exceptions, and then modify the promotional path when necessary. You can also use data validation rules to stop an approval unit from passing to the next reviewer when data errors exist in the approval unit.

To modify the approval unit promotional path:

1. Create or select a data validation rule (see [Managing Data Validation](#)).
2. In the **Data Validation Rule Builder**, click  to create promotional path conditions and specify the action taken when a budget calculation doesn't meet these conditions.
3. Select one action:
 - **Update Promotional Path** to create a promotional path condition that adds reviewers or owners to the promotional path if the condition you set is triggered.
 - **Do Not Promote** to prevent promoting an approval unit to the next reviewer. This action usually indicates invalid data in the budget.
4. In the **Process Cell** dialog box, beneath **Approvals**, click **Add** to add a promotional path condition.

Promotional path conditions are processed in the order they are listed. Use the  and  to move them up or down within the list.

5. **Optional:** To duplicate a promotional path condition:
 - a. Select a promotional path condition, and then click **Copy**.
 - b. Select the promotional path condition that will precede the copied one in the list, and then click **Paste** to add the copied promotional path condition.
6. **Optional:** Click **Delete** to remove a promotional path condition.

7. In **Approval Unit Hierarchy** and **Approval Units**, click  to select the approval unit hierarchy and approval units the promotional path condition affects.
8. In **Promotional Path Condition**, specify the promotional path changes for the approval units selected in Promotional Path Condition. Select:
 - a. In **Position**, specify where the promotional path changes for the approval units selected in **Approval Units**. Select:
 - **Before** to insert the alternate owner or reviewer before ownership reaches the approval units specified in **Promotional Path Condition**.
 - **After** to insert the alternate owner or reviewer after ownership reaches the approval units specified in **Promotional Path Condition**.
 - **Before and After** to insert the alternate owner or reviewer before and after ownership reaches the approval units specified in **Promotional Path Condition**.
 - b. In the **Approval Units** column of **Promotional Path Condition**, click  to select the approval units the action selected in **Position** affects.

 **Note:**

The selected approval units must be ancestors of the approval units selected in the previous step. If you select approval units that are not ancestors, the promotional path condition isn't evaluated when the approval unit hierarchy is validated.

9. In the **Assign** column, specify the role, user type, and the user or UDA for each alternate owner, reviewer, and user to be notified if the rule exception occurs.
 - a. In **Role**, select:
 - **Owner** to select the alternate owner
 - **Reviewer** to select the alternate reviewer
 - **Notified Users** to select the user to be notified
 - b. In **Type**, select:
 - **User Name** to specify the alternate user
 - **From UDA** to select the dimension and to enter the prefix that was assigned to the UDA
 - c. In **Users**, specify:
 - For **User Name**, the name of the alternate user or choose one from the user selector
 - For **From UDA**, the dimension from the **Select a Dimension** drop down, and then specify the prefix that was used in the UDA to indicate that the UDA contains a user name (for example, ProdMgr:)

 **Note:**

Ensure the prefix specified is the same as the prefix that was assigned while creating the UDA, including any spaces. For instance, if there is a space between the prefix and the username (ProdMgr Kim), ensure there is a space after ProdMgr.

10. Optional: Provide messages for the users involved in the approval unit promotional path changes:

a. Click  in:

- **Sender Message** to enter the email message text sent to the user promoting the approval unit when the promotional path changes.
- In **Reviewer Message** to enter the email message text sent to the user receiving the approval unit for review due to the rule exception.

b. Click **OK** to save the messages.

The text you enter is added to the messages sent when the approval unit changes status.

11. Click **OK** to save the promotional path conditions, and return to data validation rule creation.

Design Considerations for Approval Unit Promotional Path Data Validation Rules

When you design rules that affect the approval unit promotional path, you need to understand the order in which these rules are evaluated and applied. For information about designing data validation rules and expected outcomes, see [Managing Data Validation](#).

Managing Approval Unit Hierarchies

Related Topics

- [About Approval Unit Hierarchies](#)
- [Working with Approval Unit Hierarchies](#)
- [Assigning Approval Unit Hierarchy Scenario and Version Combinations](#)

About Approval Unit Hierarchies

An approval unit hierarchy contains approval units and entities that are part of the review process.

Parent/child relationships between approval unit hierarchy members affect the review process:

- When you promote or reject a parent, its children are promoted or rejected unless they are Approved. The owner for the parent becomes the owner of the children.
- When you approve a parent, its children are approved.
- After all children are promoted to the same owner, the parent is promoted to the owner.
- When the status of all children changes to one status, for example Signed Off, parent status changes to the same status.

You can't change the status of a parent if its children have different owners. If the children are promoted to, submitted to, or signed off by different users, the parent has no owner and only a Service Administrator can change its status.

Working with Approval Unit Hierarchies

Use approval unit hierarchies to adapt the budgeting process to all types of organizational requirements.



- Approval units are a combination of the entity and other dimensions. For example, if an application includes all of a company's products, the approval unit hierarchy for North America can include dimensions and members appropriate to products sold in North America. Similarly, the approval unit hierarchy for the European division can include dimensions and members for products sold in Europe. Within the same approvals hierarchy, Latin America entities can be enhanced using the Account dimension, creating approval units such as Entities by HR, Entities by Capital Expenditures, and Entities by Revenue.
- Use preset budgeting mode templates to create hierarchies that are bottom-up, distributed, or free form.
- Include dynamic links to dimensions based on generation numbers for the entity dimension and the secondary dimension that is used. For example, automatically add generations 0 to 3 in the entity or segment dimension to the approval unit hierarchy. If a change occurs in the dimension, the approval unit hierarchy can be easily updated.
- Import and export approval unit hierarchies.
- Create approval unit hierarchies that differ by scenario and version. For example, the Budget scenario can have a large approval unit hierarchy consisting of departments, accounts, and products, while the Forecast has a simpler process organization with fewer levels of approval.






Related Links

- [Viewing Approval Unit Hierarchies](#)
- [Creating Approval Unit Hierarchies](#)
- [Selecting Approval Unit Hierarchy Scenario and Version](#)
- [Editing Approval Unit Hierarchies](#)
- [Deleting and Renaming Approval Unit Hierarchies](#)
- [Viewing Approval Unit Hierarchy Usage](#)
- [Synchronizing Approval Unit Hierarchies](#)
- [Exporting Approval Unit Hierarchies](#)
- [Importing Approval Unit Hierarchies](#)

Viewing Approval Unit Hierarchies

To view the listing of approval unit hierarchies:



1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. On the **Approval Unit** listing page, perform an action:
 - To create an approval unit hierarchy, click . See [Creating Approval Unit Hierarchies](#).

- To edit an approval unit hierarchy, click . See [Editing Approval Unit Hierarchies](#).
- To delete an approval unit hierarchy, click . See [Deleting and Renaming Approval Unit Hierarchies](#).
- To rename an approval unit hierarchy, click . See [Deleting and Renaming Approval Unit Hierarchies](#).
- To synchronize changes to approval unit hierarchies, click . See [Synchronizing Approval Unit Hierarchies](#).
- To refresh the listing, click 

Creating Approval Unit Hierarchies

Entity is the primary dimension for each approval unit hierarchy. As members are added to the Entity dimension, the inclusion rules you create determine whether a new member is part of the approval process. A Service Administrator can also add members to the hierarchy as exceptions to the approval unit hierarchy structure.

To create an approval unit hierarchy:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. Click .




Note:

The approvals dimension is set to Entity. There are no other choices.

3. Create the generic rule that defines which Entity members are included in the approval process (see [Setting Approval Unit Hierarchy Name, Scope, and Template](#)).
4. Select the primary and subhierarchy members to include in the approval process (see [Selecting Approval Unit Hierarchy Members](#)).
5. Assign owners and reviewers for each stage of the approval process and create the approval unit promotional path (see [Assigning Approval Unit Owners and Reviewers](#)).
6. Click **Save**.

Setting Approval Unit Hierarchy Name, Scope, and Template

To set up an approval unit hierarchy:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. Take an action:
 - To create a new hierarchy, click .
 - To edit an existing hierarchy, select an approval unit hierarchy, and then click .

3. Complete the **Approvals Dimension** details:

- **Hierarchy Name**
- **Description** (optional)
- For **Enable Approvals**, select an option:
 - **None**: Includes no approval units in the approval process by default
To add approval unit groups or individual approval units to the approval process, see [Selecting Approval Unit Hierarchy Members](#).
 - **All**: Adds all approval units to the approval process
 - **Custom**: Adds fields which enable you to add individual approval units and approval units based on Parent member and generation criteria. See [Selecting Approval Unit Hierarchy Members](#).
- For **Approvals Template**, select an option:
 - **Bottom Up**: See [Bottom-Up Budgeting](#).
 - **Distribute**: See [Distributed Budgeting](#).
 - **Free Form**: See [Free-Form Budgeting](#).
- **Cube**: Select the cube from which aggregated approval unit values are derived.
See [Assigning Approval Unit Owners and Reviewers](#).
- For **Extended Approval Flow**, select an option:
 - **None**: The approval workflow will use the Entity dimension only, and not use a secondary dimension or approval groups. You'll make your Entity member selections on the **Select Primary Members** tab.
 - **Secondary**: The approval workflow will use a secondary dimension. You'll make your member selections on the **Primary and Subhierarchy Selection** tab.
 - **Approval Group**: Enables you to assign approval groups to the approvals workflow. You can create approval groups or select existing approval groups on the **Assign Approval Groups** tab. See [Managing Submission Phases with Approval Groups](#).
- **Extended Approval Flow Apply at All Levels**: (This option is only available if the **Secondary** or **Approval Group** options are selected.) Applies the **Extended Approval Flow** option to all levels in the approval unit hierarchy.
- **Phase Dependency**: (This option is only available if the **Secondary** or **Approval Group** options are selected.) Requires the approval workflow to be submitted in phases based on the order of entries you define in [step 4](#).

For example, the first entry in the list must be promoted before the second entry. Note that both entries can be at the same level, but the second entry cannot be promoted before the first entry. Hence the order of the entries is important. You can rearrange the order using the up and down arrows.

4. Take an action:

- If you selected **None** for **Extended Approval Flow**, make your approval unit hierarchy member selections on the **Select Primary Members** tab. Click **Next** or select the **Select Primary Members** tab. See [Selecting Approval Unit Hierarchy Members](#).
- If you selected **Secondary** for **Extended Approval Flow**, you'll select the approval unit hierarchy members on the **Primary and Subhierarchy Selection** tab. Click **Next** or select the **Primary and Subhierarchy Selection** tab. See [Selecting Approval Unit Hierarchy Members](#).

- If you selected **Approval Group** for **Extended Approval Flow**, you'll select the approval unit hierarchy approval groups and members on the **Assign Approval Groups** and **Select Primary Members** tabs. Click **Next** or select the **Assign Approval Groups** tab. See [Assigning Approval Groups to an Approval Unit Hierarchy](#).
- Click **Save** and then **OK** to save changes and close the approval unit hierarchy.

Bottom-Up Budgeting

Data is input at the leaf member level (for example, children of Budget Group) and consolidated by rolling data up the organizational hierarchy. When the budget is started, data is populated for each scenario and user independently. The ownership follows the hierarchy of approval in bottom-up mode. Users can view or edit data based on access permissions defined for the approval unit. The topmost Budget Group owner consolidates individually approved budgets into a final consolidated budget.

Distributed Budgeting

Budget data is entered at the leaf level of the organization, and ownership starts at the top level of the organization. Ownership is then distributed down the organization hierarchy. After ownership reaches the lower levels, budgets are submitted back to the top through the approval process. The top budget group owner reviews, approves, and loads the budgets for budgetary control, transaction control, and reporting.



Free-Form Budgeting

With free-form budgeting, data is input at the leaf member, and users select the next owner from a drop-down list. The free-form budgeting mode allows users to select the next owner from a drop-down list. Select this budget template if you're not using the approvals features described in [Creating Approval Unit Hierarchies](#).

Selecting Approval Unit Hierarchy Members

Depending on the option you chose for **Extended Approval Flow** on the previous **Approvals Dimension** tab, you'll select approval unit hierarchy members either on the **Select Primary Members** tab or the **Primary and Subhierarchy Selection** tab.

To select approval unit hierarchy members:



1. Take an action:
 - From **Approvals Dimension**, click **Next** or select the **Select Primary Members** tab or the **Primary and Subhierarchy Selection** tab to continue defining an approval unit hierarchy.
 - Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**. Select an approval unit hierarchy, click , and then select **Select Primary Members** or **Primary and Subhierarchy Selection** to edit members.

 **Note:**

- At any time during approval unit hierarchy member selection, you can click **Reset to Default Hierarchy** to reset the approval unit hierarchy to its default membership defined in the **Approvals Dimension** page.
- Shared members are not displayed in the approval unit hierarchy.

2. Define how to display the approval unit hierarchy:

- **All Entities:** Displays all potential approval units
- **Approval Units:** Displays only enabled approval units
- **Search:** Searches approval units by **Name**, **Alias**, or **Both**.

Enter any part or all of a name in **Search** to locate an entity, then click  or  in the approval unit hierarchy.

- To move from page to page in a multipage approval unit hierarchy, enter a page number in **Page** and click **Go**, or click **Start** (first page), **Prev** (previous page), **Next**, or **End** (last page).


3. **Optional:** For approval units not included in the default settings for the approval process, check the box to the left of the approval unit name to include the approval unit in the approval process.

4. **Optional:** Right-click an approval unit name to define subhierarchy members for the approval process, and then select one option:

- **Include Children** to include the children of the approval unit.
- **Include Member** to include just the approval unit, but none of its descendants.
- **Include All Descendants** to include all descendants of the approval unit.
- **Include Generation** to include one or more approval unit generations. Specify the generations to include when prompted.
- **Exclude Children** to exclude the children of the approval unit.
- **Exclude Member** to exclude just the approval unit, but none of its descendants.
- **Exclude All Descendants** to exclude all descendants of the approval unit.
- **Exclude Generation** to exclude approval unit generations. Specify the generations to exclude when prompted.

5. If you chose **Secondary** for **Extended Approval Flow** on the previous **Approvals Dimension** tab, add a secondary dimension to the approval unit included in the approval process to provide finer granularity:


a. Select a dimension from **Dimension**.

b. In **Parent Member**, click  to display the member selection window, and then select one member as the parent member for that dimension.

c. In **Relative Generation**, specify the parent-member generations to include.

Adding a generation adds all members of that generation to the approval process.



d. Check **Auto Include** to automatically include newly-added members to the approval unit hierarchy that meet the selected criteria.

- e. **Optional:** Click  under **Selected Members** for the approval unit to refine the members it includes. Clear the check box next to any member you want to remove.
6. Take an action:
 - Click **Next** or select **Assign Owners** to specify approval unit ownership (see [Assigning Approval Unit Owners and Reviewers](#)).
 - Click **Save** and then **OK** to save changes and close the approval unit hierarchy.

Assigning Approval Unit Owners and Reviewers

Approval unit ownership is inherited from the approval unit parents. Approval unit reviewers are also inherited. You can also explicitly specify approval unit owners and reviewers to assign owners and reviewers other than those approval units inherit.

To assign approval unit reviewers and owners:

1. Take an action:
 - From the **Select Primary Members** tab or the **Primary and Subhierarchy Selection** tab, click **Next** or select the **Assign Owners** tab to continue defining an approval unit hierarchy.
 - Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**. Select an approval unit hierarchy, click , and then select the **Assign Owners** tab to specify approval unit ownership.

2. Select an approval unit, then under **Owner**, click  to select an owner.


An approval unit can have only one owner. Either a user or a group can be the owner. Select the **Users** tab to assign an individual user as the owner. Select the **Groups** tab to assign a group as the owner. See [About Group-based Approvals](#).

3. Under **Reviewer**, click  and select approval unit reviewers.

Reviewers can be individual users, a single group, or multiple groups. Select the **Users** tab to assign individual users as reviewers. Select the **Groups** tab to assign a single group or multiple groups as the reviewer. See [About Group-based Approvals](#).

Note:



When using the Bottom Up or Distribute template, if the reviewers are individual users, select the reviewers in the order you want them to review the approval unit. The first reviewer in the list is the first user to work on the approval unit. When the first reviewer promotes or submits the approval unit, the second reviewer selected becomes the approval unit owner, and so on through the list of reviewers you create.

4. To enable viewing the aggregated value of approval units during approvals, under **Value Definition Members**, click  to define the intersection of non-approval unit dimensions.

 **Note:**

- For non-approval unit dimensions: To view aggregated approval unit values, on **Member Selection**, you must select one member for each non-approval unit dimension in the cube selected on the **Approvals Dimension** tab. If you don't select members for the non-approval unit dimensions, the aggregated approval unit value is blank.
- For approval unit dimensions: Value definition members specified for a parent member in the approval unit hierarchy are inherited by the descendants of that member. If value definition members are selected for both a parent and child member of an approval unit dimension, then the child's selection takes precedence. For example, you select a value definition member for both the parent US and its child, Western Region; the value definition member for Western Region takes precedence. At runtime, the Entity, Scenario, Version, and secondary dimension members specified in the approval unit hierarchy are selected.
- In Standard multicurrency applications: In **Preferences**, users set the **Reporting Currency** in which to display the aggregated approval unit. See *Working with Planning*. To ensure that totals are correct, remind users to launch the Currency Conversion business rule.

Note that in Standard multicurrency applications, the reporting currency is assumed, so you don't select a value definition member for currency.

5. Under **Promotional Path**, click  to display the approval unit promotional path, verify that it's correct, and then correct any errors.
6. Under **Notify These Users**, click  to select the users to notify for each move of the approval unit from one user to another.
7. **Optional:** Repeat Steps 2 through 6 for other approval units to change their inherited owners or reviewers.
8. Click **Save** to save your work and continue, or click **OK** to save your work and close the approval unit hierarchy.

About Group-based Approvals

When assigning approval unit owners, you can assign individual users, or you can assign a group. When assigning approval unit reviewers, you can assign individual users, a group, or multiple groups.

See the following topics for more information:

- [Assigning a Group as the Owner](#)
- [Assigning a Group or Groups as the Reviewer](#)

Assigning a Group as the Owner

Only one user or one group can be assigned as an owner of an approval unit. Within a group, any user can become the owner, but only one user can be the owner at a time. Only the user assigned as an owner can perform actions. Other group members can take ownership away from the current owner. If no one is assigned as the owner, then anyone in the group can perform actions on behalf of the group without having to first claim ownership.

Assigning a Group or Groups as the Reviewer

If you select individual users as reviewers, all users must approve, and the approvals must follow the order in which the users are entered. If you select a group (or groups) as a reviewer, any user within the group can be the reviewer and can promote to the next level.

The following are some examples of how you can enter multiple reviewers:

Example 24-3 Example 1

```
North America - Bill
  USA - Nick, Sandy, Kim
    CA - John
```

The approval path is John, Nick, Sandy, Kim, Bill.

Example 24-4 Example 2

```
North America - Bill
  USA - {Group A}
    CA - John
```

The approval path is John, any user in Group A, Bill.

Example 24-5 Example 3

```
North America - {Group B}, Bill
  USA - Susan, {Group A}
    CA - John
```

The approval path is John, Susan, any user in Group A, any user in Group B, Bill.

Example 24-6 Example 4


```
North America - {Group B}, Bill
  USA - Susan, {Group A}
    CA - John
```

**A validation rule indicates that if New Hires > 4, then before USA, set {Group HR} as reviewer.

If the condition is true for the CA approval unit, then the path is: John, any user in Group HR, Susan, any user in Group A, any user in Group B, Bill.


Selecting Approval Unit Hierarchy Scenario and Version

To select the approval unit hierarchy scenario and version:

1. Click the **Navigator** icon , and then under **Workflow**, click **Manage Approvals**.
2. In **Scenario**, select a scenario.
3. In **Version**, select a version.
4. Click **Go** to display the approval unit hierarchy defined for the selected scenario and version.



Two panes are displayed on the **Manage Approvals** page. The upper pane shows a chart or hierarchy based on the **View** option you select in the upper right corner of the pane (**Process Status**, **Level Status**, **Group Status**, or **Tree View**). There is a toggle to collapse and expand the upper pane in the lower right corner of the view pane.

The lower pane displays the hierarchy details:

- **Approval Unit**
 - **Plan Cycle** (Tree View only), which displays whether the approval unit is started and if it's included in the budget process.
 - **Approvals Status**, for example, **1st Pass**.
 - **Sub-Status**, which tracks failures that occur while performing actions on the approval unit. Typically, failures can include lack of security access, validation rule failures, or other system failures that prevent the action from being completed successfully.
 - **Current Owner**
 - **Location**
 - **Total Value**
 - In **Path**, click  to view the potential promotional path.
 - Click **Details** to display approval unit details and add or edit approval unit annotations.
5. **Optional:** If you own approval units for this hierarchy, click **Actions**, and then **Display My Approval Units** to select them.

Editing Approval Unit Hierarchies

To edit an approval unit hierarchy:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. Select the approval unit hierarchy with which you want to work.
3. Click .
4. Select the appropriate tab, depending on the changes you want to make (for example, select **Assign Owners** to edit ownership of the approval units in the hierarchy):
 - Select the **Approvals Dimension** tab to modify the approval unit hierarchy description or approvals default scope. See [Setting Approval Unit Hierarchy Name, Scope, and Template](#).
 - Select the **Primary and Subhierarchy Selection** tab to select or remove members from approvals. See [Selecting Approval Unit Hierarchy Members](#).
 - Select the **Assign Owners** tab to modify approval unit owners or reviewers. See [Assigning Approval Unit Owners and Reviewers](#).
 - Select the **Usage** tab to view the application objects (forms or scenario and version combinations) that reference the approval unit hierarchy. See [Viewing Approval Unit Hierarchy Usage](#).
5. Click **Save** when done.




To select an approval unit hierarchy scenario and version with which to work, see [Selecting Approval Unit Hierarchy Scenario and Version](#).

Deleting and Renaming Approval Unit Hierarchies

You can delete an approval unit hierarchy if it's not referenced by other application objects such as forms or scenario and version combinations. The **Usage** tab displays objects that reference the selected approval unit hierarchy and links you to the objects so you can disassociate them from the hierarchy.

You can also change the name of an approval unit hierarchy. Renaming an approval unit hierarchy doesn't affect application objects that reference the hierarchy.

To delete or rename approval unit hierarchies:



1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. Take an action:
 - To delete, select the approval unit hierarchy to delete, and then click .
 - To rename, select the approval unit hierarchy to rename, and then click . Enter the new name for the approval unit hierarchy in the dialog box.
3. Click **OK**.

If you select an approval unit hierarchy that is referenced by other application objects, an error message is displayed. See [Viewing Approval Unit Hierarchy Usage](#) to view and edit the application objects that reference the approval unit hierarchy.

Viewing Approval Unit Hierarchy Usage

Approval unit hierarchies might have dependencies such as approval unit assignments or data validation rules which are defined in forms. If dependencies exist for an approval unit hierarchy, the hierarchy can't be deleted until the dependencies are removed. The **Usage** tab enables you to view approval unit hierarchy dependencies and links you to the forms or scenario and version combinations so you can remove the dependencies, if needed.

To view approval unit hierarchy usage:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. Select an approval unit hierarchy, then click , and then select the **Usage** tab to view approval unit hierarchy dependencies.
3. Select **Forms** to view associated data validation rules:
 - If no data validation rules are associated, a message is displayed.
 - If data validation rules are associated, they are listed by form. Click the rule hyperlink to display the form in edit mode in a new tab. You can then update or delete the data validation rule to disassociate it from the approval unit hierarchy. See [Creating and Updating Data Validation Rules](#).
4. Select **Approval Unit Assignment** to view associated scenario and version combinations:
 - If no scenario and version combinations are associated, a message is displayed.
 - If scenario and version combinations are associated, they are listed by scenario. Click the version hyperlink to display the combination in a new tab. You can then remove the approval unit assignment to disassociate it from the approval unit hierarchy. See [Assigning Approval Unit Hierarchy Scenario and Version Combinations](#).

5. If dependencies are removed during steps 3 or 4, click **Refresh** on the **Usage** tab to view the remaining dependencies.
6. If you're deleting an approval unit hierarchy, repeat steps 3, 4, and 5 until all dependencies are removed.

Once all dependencies are removed from an approval unit hierarchy, you can delete the hierarchy. See [Deleting and Renaming Approval Unit Hierarchies](#).


Synchronizing Approval Unit Hierarchies

When you add, delete, or modify dimension members that are used in approval unit hierarchies, the affected approval unit hierarchy must be synchronized with the changes. When you display the list of approval unit hierarchies, the entry for each approval unit hierarchy specifies whether recent changes are reflected in the approval unit hierarchy. Use this procedure to synchronize dimension member changes with the approval unit hierarchy.

Note:

When you add dimension members, they are added as approval units only if they meet the criteria in the inclusion rules for the approval unit hierarchy. For example, if the added entity is a fourth-generation entity, and the inclusion rules specify generations one through three as approval units, the entity isn't added as an approval unit. If the entity is a third-generation member, however, it's added as an approval unit the next time the approval unit hierarchy is edited and saved, or synchronized.

To synchronize changes to approval unit hierarchies:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit**.
2. In the **Synchronized** column, approval unit hierarchies are labeled as follows:
 - **Synchronized**: Changes are synchronized with the approval unit hierarchy
 - **Not Synchronized**: Changes are not synchronized with the approval unit hierarchy
 - **Locked By user**: A user is editing or synchronizing the approval unit hierarchy

Note:

If a user begins editing or synchronizing an approval unit hierarchy after you display the approval unit hierarchy list, the approval unit hierarchy list doesn't display "Locked" for the approval unit hierarchy. If you try to synchronize this approval unit hierarchy, the synchronization doesn't occur, and an error message states that it's being edited.

3. Select an approval unit hierarchy listed as **Not Synchronized**, and then click



Changes are applied to the approval unit hierarchy, and the list of approval units is updated according to the inclusion rules defined for the approval unit hierarchy.


 **Note:**

You can't synchronize changes to an approval unit hierarchy that another user is editing or synchronizing.

Exporting Approval Unit Hierarchies

When you export an approval unit hierarchy, you create a file that contains the approval unit hierarchy information. After you create this file, you can copy its contents to an existing approval unit hierarchy (see [Importing Approval Unit Hierarchies](#)).

To export approval unit hierarchies:

1. Click the **Navigator** icon , and then under **Workflow**, click **Import and Export**.
2. Select **Export Approval Unit Hierarchy**.
3. In **Existing Approval Unit Hierarchy Name**, select an approval unit hierarchy to export.
4. Click **OK**.
5. When the **Save** dialog box is displayed, save the export file to a location of your choice.
6. Click **Export** or **Done**. **Export** performs the action, and **Done** closes the dialog box.

Importing Approval Unit Hierarchies


An approval unit hierarchy can be populated with the contents of an approval unit hierarchy import file. The import file is the result of exporting an existing approval unit hierarchy. See [Exporting Approval Unit Hierarchies](#).

Importing the approval unit hierarchy information doesn't create an approval unit hierarchy. The approval unit hierarchy populated from the export file must exist and have at least a name before the import. Loading approval unit hierarchies first deletes all members of the approval unit hierarchy, and then adds each member specified in the input file as a new member.

 **Note:**

An approval unit hierarchy load deletes an existing member and its children from the hierarchy if the member isn't specified in the input file.

To import an approval unit hierarchy:

1. Click the **Navigator** icon , and then under **Workflow**, click **Import and Export**.
2. Select **Import Approval Unit Hierarchy**.
3. In **Existing Approval Unit Hierarchy Name**, select the approval unit hierarchy receiving the exported information.

 **Note:**

The imported approval unit hierarchy includes the defined owner, reviewers, and rules for determining the promotional path.

4. For **Approval Unit Hierarchy with Ownership**, click **Browse** to select the exported approval unit hierarchy file to import.
5. Click **OK**.
6. Click **Import** or **Done**. **Import** performs the action, and **Done** closes the dialog box.



If the message *Import successful* is displayed, the approval unit hierarchy information in the exported file was successfully copied to the approval unit hierarchy that you selected in **Existing Approval Unit Hierarchy Name**.


If the message *Import not successful. Some items have not been imported* is displayed, click **Details** to view the log file. Correct the errors and retry importing the approval unit hierarchy.

Assigning Approval Unit Hierarchy Scenario and Version Combinations

During the budget process, calculations are run for various scenarios, such as Q1 or FY10. For each scenario, calculations can be run for various versions, for example Initial or Final. Before beginning the budget process, assign approval unit hierarchies to the scenario and version combinations included in the budget process.

To assign approval unit hierarchy scenario and version combinations:

1. Click the **Navigator** icon , and then under **Workflow**, click **Approval Unit Assignment**.
2. Add an approval unit assignment.
 - a. Click , in the **Actions** column, for the approval unit.
 - b. Click **Select** in the **Scenario** column, and then select the scenario to associate with the approval unit hierarchy
 - c. Click **Select** in the **Version** column, and then select one or more versions to associate with the selected scenario.
 - d. Click **OK**.

A new assignment row is displayed.
3. **Optional:** Click  to remove an approval unit assignment.
4. Click **Save** to save the approval unit assignments and continue or click **Cancel** to undo any changes made since the last save.

A

Naming Restrictions

Understand important restrictions for names, including names for applications, databases, dimensions, members, aliases, users, and groups.

Related Topics

- [Naming Restrictions for Applications and Databases](#)
- [Naming Restrictions for Dimensions, Members, and Aliases](#)
- [Dimension and Member Names in Calculation Scripts, Report Scripts, Formulas, Filters, and Substitution Variables](#)
- [Restrictions for User and Group Names](#)

Naming Restrictions for Applications and Databases

When naming an application, follow these rules:

- Use no more than eight characters for an application's name.
- Don't use spaces or tabs.
- Don't use an underscore (_) as either the first or last character.
- Don't use these special characters:

Table A-1 Restricted Characters in Application Names

Character	Meaning
*	asterisk
\	backslash
[]	brackets
:	colon
,	comma
"	double quotation mark
=	equal sign
>	greater than sign
<	less than sign
.	period
+	plus sign
?	question mark
;	semicolon
'	single quotation mark
/	slash
	vertical bar

- For application names in relational database environments, don't use extended characters (except for underscores).
- For aggregate storage databases, don't use DEFAULT, LOG, METADATA, or TEMP as application names.

Enter names in the preferred case. Application names are created exactly as entered.

Naming Restrictions for Dimensions, Members, and Aliases

When naming dimensions, members, and aliases, follow these rules:

- Use no more than 80 characters for dimension, member, or alias names.
- Names are not case-sensitive for dimensions, non-shared members, and aliases. Do not use matching names with only case differences; for example, do not name two members "zzz" and "ZZZ," or a base member "zzz" and a shared member "ZZZ."

In other words, shared member names must use the same name and case of the base member. When you rename a base member (even if all you do is change the case), the shared member names will be updated to match the base member names.

- Do not use dimension names that are the same name as a member property or a column header in the metadata load file; for example, Data Type.
- HTML tags cannot be used in member names, dimension names, aliases, and descriptions.
- The TAB key is restricted and cannot be used in dimension, member, and alias names.
- The following is a list of characters that are restricted and cannot be used in dimension, member, and alias names:

Table A-2 Restricted Characters in Dimension, Member, and Alias Names

Character	Meaning
"	quotation mark
[]	bracket
\	backslash
/	slash

 **Note:**

- Brackets [] are permitted but not recommended in block storage outlines. They cause errors when converting to aggregate storage outlines.
- Do not use the ASCII substitute character (zero-width space character) 0x1A in member names and aliases.

- The following is a list of characters that cannot be used at the beginning of dimension, member, and alias names:

Table A-3 Restricted Characters at the Beginning of Dimension, Member, and Alias Names

Character	Meaning
@	at sign
&	ampersand
\	backslash
[]	brackets
,	comma
-	dash, hyphen, or minus sign
=	equal sign
<	less than sign
()	parentheses
.	period
+	plus sign
"	quotation mark
/	slash
_	underscore
	vertical bar

 **Note:**

Member names with the preceding characters are not allowed in business process data export jobs.

- Spaces cannot be placed at the beginning or end of names.
- For time periods in custom calendars, don't use spaces in prefixes.
- The following cannot be used as dimension, member, or alias names:
 - Calculation script commands, operators, and keywords
 - Function names and function arguments
 - Names of other dimensions and members (unless the member is shared)
 - If Dynamic Time Series is enabled, don't use History, Year, Season, Period, Quarter, Month, Week, or Day.
 - In unique member outlines that contain an attribute dimension, you cannot use Sum, Count, Min, Max, and Avg as member or dimension names. Using these names causes duplicate name conflicts.

 **Note:**

The members that are created in the attribute calculations dimension (Sum, Count, Min, Max, and Avg) are not considered reserved words because you can change these names in the attribute calculations dimension and then use the standard name in an attribute or standard dimension.

If the outline is tagged as a duplicate member outline, and an attribute dimension (and, therefore, the attribute calculations dimension) exists before you use Sum, Count, Min, Max, and Avg as a base member, the duplicate name is allowed. However, if, you use Sum, Count, Min, Max, and Avg as a base member before creating an attribute dimension, the duplicate name isn't allowed.

- The following is a list of words that are restricted and cannot be used in dimension, member, and alias names:

Table A-4 Restricted Words in Dimension, Member, and Alias Names

Restricted Word	Restricted Word	Restricted Word
ALL	AND	ASSIGN
AVERAGE	CALC	CALCMBR
COPYFORWARD	CROSSDIM	CURMBRNAME
DIM	DIMNAME	DIV
DYNAMIC	EMPTYPARM	EQ
EQOP	EXCEPT	EXP
EXPERROR	FLOAT	FUNCTION
GE	GEN	GENRANGE
GROUP	GT	ID
IDERROR	INTEGER	LE
LEVELRANGE	LOCAL	LOOPBLOCK
LOPPARMS	LT	MBR
MBRNAME	MBRONLY	MINUS
MISSING	MUL	MULOP
NE	NON	NONINPUT
NOT	OR	PAREN
PARENPARM	PERCENT	PLUS
RELOP	REQUEST	SET
SKIPBOTH	SKIPMISSING	SKIPNONE
SKIPZERO	STATUS	TO
TOLOCALRATE	TRAILMISSING	TRAILSUM
TYPE	UMINUS	UPPER
VARORXMBR	XMBRONLY	\$\$UNIVERSE\$\$
#MISSING	#MI	

Dimension and Member Names in Calculation Scripts, Report Scripts, Formulas, Filters, and Substitution Variables

In substitution variable values, calculation scripts, report scripts, filter definitions, partition definitions, or formulas, you must enclose member names in brackets ([]) when used within MDX statements and in quotation marks (") for block storage databases, in these situations:

- The name starts with one or more numerals (for example, 100).
- The name contains spaces or these characters:
 - ampersand (&)
 - asterisk (*)
 - at sign (@)
 - backslash (\)
 - braces ({ })
 - colon (:)
 - comma (,)
 - dash, hyphen, or minus sign (-)
 - exclamation point (!)
 - equal sign (=)
 - greater than sign (>)
 - less than sign (<)
 - parentheses ()
 - percent sign (%)
 - period (.)
 - plus sign (+)
 - semicolon (;)
 - slash (/)
 - tilde (~)

In calculation scripts and formulas, enclose member names that are also Essbase keywords in quotation marks (") for block storage databases, and in brackets ([]) for aggregate storage databases including these member names:

```
BEGIN DOUBLE ELSE END FUNCTION GLOBAL IF MACRO MEMBER RANGE RETURN STRING THEN
```

Enclose in quotation marks names, in calculation scripts, report scripts, or formulas, that contain or start with spaces or these characters: + - * / () : , @ ;) { } [] <

Also enclose in quotation marks names that start with numbers. For example:

```
@SUM(ac1, "12345");
```

Restrictions for User and Group Names

User and group names can have up to 80 characters.

B

Form Formula Functions

Learn how to use formulas and functions in forms.

Related Topics

- [About Form Formula Functions](#)
- [Working with Formulas](#)
- [Formula Functions](#)

About Form Formula Functions

After you create a formula row or column, define the formula using the **Segment Properties** pane. Formulas include grid references, mathematical operators, and, optionally, mathematical functions. For a complete list, see [Formula Functions](#).



Note:

The application requires level 0 members that are Dynamic Calc to have a member formula. For Dynamic Calc members that don't have a formula, the application inserts a semicolon (;) when refreshed.


Working with Formulas

Related Topics

- [Creating Formulas](#)
- [Editing Formulas](#)
- [Deleting Formulas](#)


Creating Formulas

To create formulas:

1. Select the row or column for which to associate the formula.
2. If it doesn't automatically expand, select **Segment Properties**.
3. In Formula, enter the name for the formula and then click .
4. In the **Formula** box that is displayed, select the operation or function that the formula will perform, such as COUNT(), MAX(), and IfThen(). See [Formula Functions](#).
5. Click **Validate** to ensure that the formula doesn't contain any errors.

Editing Formulas

To edit formulas:

1. Open a form with a formula row or column.
2. In **Layout**, select a numbered formula row or column.
3. Use **Segment Properties** to modify the formula properties.
4. Click  to change the operation or function performed.
5. Save the form.

Deleting Formulas

To delete a formula:

1. Select the formula row or column.
2. Click **Delete**.
3. To verify formula deletion:
 - a. Click the checkmark in the formula bar.
 - b. Click another cell within the grid to reset the formula bar.
 - c. Click the cell from which you deleted the formula to verify deletion.

Formula Functions

This section defines the mathematical functions available for creating formulas for form formula rows and columns. To insert formula rows and columns in forms, see [Adding Formula Rows and Columns](#).

The syntax for mathematical functions:

```
FunctionName (arguments)
```

For more information about arguments, see [Arguments](#).

Table B-1 Mathematical Function Syntax

Variable	Description
<i>FunctionName</i>	The name of a mathematical function
<i>arguments</i>	A numeric value, a row, column, or cell reference, or an embedded function

Mathematical Functions

Table B-2 Mathematical Functions

Function	Description
Abs	Returns the absolute value of numeric values or references. See Abs .

Table B-2 (Cont.) Mathematical Functions

Function	Description
Average	Returns the average of a group of numeric values or references. See Average .
AverageA	Returns the average of a group of numeric values or references. The calculation includes #MISSING cells only for rows or columns that are not suppressed. See AverageA .
Count	Returns the number of values in a group of numeric values or references. See Count .
CountA	Returns the number of values in a group of numeric values or references. The calculation includes #MISSING cells only for rows or columns that are not suppressed. See CountA .
Difference	Returns the absolute value of a numeric value or reference subtracted from another numeric value or reference. See Difference .
Eval	Evaluates an expression. Eval is useful for embedding expressions as function arguments. See Eval .
IfThen, If	Returns one value if a condition equals true, and another value if a specified condition equals false. See IfThen, If .
Max	Returns the maximum value from a group of numeric values or references. See Max .
Min	Returns the minimum value from a group of numeric values or references. See Min .
Mod	Returns the remainder, modulus, from a division formula. See Mod .
PercentOfTotal	Returns the result of a numeric value or reference divided by another numeric value or reference, multiplied by 100. See PercentOfTotal .
Pi	Returns the number 3.14159265358979, to 15 digits. See Pi .
Product	Multiplies all numbers or references and returns the product. See Product .
Random	Returns a random number between 0.0 and 1.0. See Random .
Round	Rounds a number up or down by specified digits. See Round .
Sqrt	Returns the square root of a numeric value, row, column, or cell. See Sqrt .
Sum	Returns the sum of a group of numeric values or references. See Sum .
Truncate / Trunc	Removes the specified number of digits from numeric values. See Truncate/Trunc .
Variance / Var	Evaluates the difference between the specified values based on the account type for the current account. See Variance/Var .
VariancePercent / VarPer	Evaluates the percentage difference between the specified values based on account type for the current account. See VariancePercent/VarPer .

Arguments

Mathematical functions accept numeric values, row, column, or cell references, or embedded functions as arguments. There are four argument types:

- Numeric
See [Numeric Arguments](#).

- Property
See [Property Arguments](#).
- Row, column, or cell reference
See [Row, Column, or Cell Reference Arguments](#).
- Embedded functions
See [Embedded Functions as Arguments](#).

Numeric Arguments

The syntax for a numeric argument is

```
(numeral1, numeral2,...numeraln)
```

where numerals 1 through *n* are any numbers including decimals and negative values. For example, the expression `Average(10,20,30)` returns the value 20.

Row, Column, or Cell Reference Arguments

The row, column, or cell argument identifies a row, column, or cell in a grid. The syntax:


```
FunctionName (GridName.GridElement[segment (range)].Property)
```

Table B-3 Argument Components

Argument	Description
<i>GridName</i>	The form name. For example: Difference (grid1.row[5], grid1.row[6]) returns the difference of two rows on form grid1. Optional. If GridName isn't specified, the default is the name of the current form.
<i>GridElement</i>	One of the following keywords: row, col, column, or cell. For example, Max(row[1], row[2], row[3]) returns the maximum value of three rows. GridElement is optional. However, a cell reference requires row and column segment identifiers. For example, cell[2, A] and [2, A] both refer to the cell that is the intersection between row 2 and column A. The keyword cell is optional. Cell references can use the [row, col] syntax or [col, row] syntax. Optional. If GridElement isn't specified, letters represent columns and numbers represent rows; for example: Max ([1, A], [2, A], [3, A]) refers to rows 1, 2 and 3 of column A.
<i>segment</i>	A row, column, or cell reference number. For an expanded row or column, you must specify the segment. For example, row[2] addresses row segment 2. Segments are enclosed in square brackets []. Required.

Table B-3 (Cont.) Argument Components

Argument	Description
<i>range</i>	<p>The rows, columns, or cell that are expanded from the specified segment. If <i>range</i> is specified, the system calculates the formula using only the specified range. For example, <code>row[2(3:5)]</code> uses only the third through fifth rows of expanded segment 2.</p> <p>Optional. When <i>range</i> isn't provided, all expanded cells are used.</p>
<i>property</i>	<p>One of these keywords: <code>average</code>, <code>averageA</code>, <code>count</code>, <code>countA</code>, <code>max</code>, <code>min</code>, <code>product</code>, or <code>sum</code>. The property specifies how to aggregate the specified expanded rows, columns, or cells.</p> <p>Oracle recommends that property is <i>not</i> specified when a reference is an argument. By not specifying the property, the function calculates the reference in the most appropriate way. For example, the following expression returns the average of the cells within rows 1 and 2:</p> <pre>Average(row[1], row[2])</pre> <p>In contrast, the following example first calculates the average of <code>row[1]</code>, then the average of <code>row[2]</code>, adds these two results, then divides by 2:</p> <pre>Average(row[1].average, row[2].average)</pre> <p>The default property for a row, column, or cell reference is <code>sum</code>. For example, <code>row[2]</code> is equivalent to <code>Sum(row[2])</code>.</p>

 **Note:**
If a segment expands to only one row or column, don't use the range argument.

Because segment is the only required part of a reference, the following references are the same:

```
Grid1.row[1].sum
```

```
[1]
```

`AverageA` and `CountA` include `#MISSING` cells in the calculation. For example, if row 1 is a segment row that expands to `Qtr1 = 100`, `Qtr2 = 200`, `Qtr3 = #MISSING`, and `Qtr4 = 400`, the following function returns the value four (4):

```
row[1].CountA
```

All other functions exclude `#MISSING` data cells. For example, the previous example of row 1 that expands to `Qtr1 = 100`, `Qtr2 = 200`, `Qtr3 = #MISSING`, and `Qtr4 = 400`, returns three in this example:

```
row[1].Count
```

Property Arguments

Property arguments consolidate expanded references to a single value that is then used in the calculation. Use property arguments to perform calculations on an aggregate row, column, or cell. The two types of property arguments are:

- Aggregate
See [Aggregate Property Argument](#).
- Reference
See [Reference Property Argument](#).

Aggregate Property Argument

An aggregate row, column, or cell contains multiple rows, columns, or cells, respectively.

The aggregate property argument is the last argument in the following mathematical function syntax:

```
FunctionName (GridName.GridElement [segment (range) ] .property)
```

You apply the following aggregate properties to a row, column, or cell reference.

Table B-4 Aggregate Properties

Properties	Description
Average	Returns the average of a row, column, or cell. The calculation excludes #MISSING and #ERROR values.
AverageA	Returns the average of a row, column, or cell. The calculation includes #MISSING and #ERROR values.
Count	Returns the number of values in a row, column, or cell. The calculation excludes #MISSING and #ERROR values.
CountA	Returns the number of values in a row, column, or cell. The calculation treats #MISSING and #ERROR values as zero (0).
Max	Returns the maximum value of a row, column, or cell
Min	Returns the minimum value of a row, column, or cell
Product	Returns the product of rows or columns
Sum	Returns the sum of a row, column, or cell

When used as a mathematical function argument, the default for property is the same as the function. In the following example the default property is Average:

```
Average (row[2])
```

When not used as a mathematical function argument, the default for property is sum. In the following example the default property is the sum of an aggregate row:

```
row[2]
```

Reference Property Argument

A reference property argument specifies how to treat formula reference results and is used in conjunction with the other properties.

There is one reference property argument:

`IfNonNumber/IFFN`

`IfNonNumber` specifies a replacement of `#MISSING` and `#ERROR` values with a specific numeric value. The syntax:

`AXIS[segment(range)].IfNonNumber(arg).AggregateProperty`

Table B-5 Reference Property Arguments

Argument	Description
AXIS	One of these keywords: row, column, or cell Optional
Segment(range)	Indicates any valid axis reference, such as a row number, column letter
IfNonNumber	Indicates how to treat missing or error data within the Axis Ref
(arg)	Indicates what number to use if missing or error data is encountered within the AxisRef
AggregateProperty	The aggregate function is used for aggregate segments Optional

Example:

If `cell[1,A] = 3` and

`cell[1,B] = #MISSING`,

The expression:

`cell[1,A] / cell[1,B]`

returns `#ERROR`.

The expression:

`cell[1,A] / cell[1,B].ifNonnumber(1)`

replaces `cell[1,B]` with 1 and returns a 3.

Note:

If you use suppression for `#MISSING` in a grid, and the grid contains a formula row or column that uses the `IfNonNumber` property, `#MISSING` remains suppressed.

Embedded Functions as Arguments

You can embed functions as arguments within a function.

Example:

In this example, the function Average is embedded in the function Sum:

```
sum(row[3:5], avg(row[4:6], 40, 50), row[7; 9], 70, 80)
```

- Row segments 3, 4 and 5
- The average of row segments 4, 5 and 6, with the numbers 40 and 50
- Row segments 7 and 9
- The numbers 70 and 80

Abs

Abs is a mathematical function that returns the absolute value of a numeric value, row, column, or cell. The absolute value of a number is that number without regard to sign. A negative number becomes positive, while a positive number doesn't change. The function syntax:

```
Abs (argument)
```

where *argument* is one of the following:

Table B-6 Arguments for the Abs Function

Argument	Description
numeric	A numeric value. For example, Abs (- 20) returns the value 20. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment(range)].Property.</code>
function	An embedded function

Examples:

- The following expression includes a numeric argument and returns the value 30:

```
Abs ( -30 )
```

- The following example returns the absolute value of the value in row 1:

```
Abs(row[1])
```

- The following example calculates the absolute value of the sum of column E:

```
Abs( column[E].sum )
```


- The following example points to expanded rows 1 through 3 within design segment 3 of the form Grid1:

```
Abs( Grid1.row[3(1:3)])
```

Average

Average is a mathematical function that returns the average of a group of numeric values, rows, columns, or cells. Average excludes #MISSING and #ERROR cells when obtaining the average.



Note:

The calculation doesn't include missing values regardless of whether they are suppressed or not.

The function syntax:

```
Average( arguments ) or Avg( arguments )
```

where *arguments* is one or more of the following:

Table B-7 Arguments for the Average Function

Argument	Description
numeric	A numeric value. For example, Average (10, 20, 30) returns the value 20. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property For example Avg(Grid1.row[4(3:5)]) returns the average of form grid1, row 4, range 3 through 5.
function	An embedded function

Examples:

- The following expression returns the value 20:

```
Avg( 10, 30, 20 )
```

- The following example returns the average of all numbers that are part of three aggregate rows:

```
Average( row[1], row[6], row[8] )
```

- The following example calculates the average of three aggregate columns; E, G, and I. The calculation produces three numbers and calculates the average of the three numbers:

```
Avg( column[E].avg, column[G].avg, column[I].avg )
```

- The following example calculates the average of aggregate row 3 and divides the average by 100:

```
Avg(row[3])/100
```

AverageA

AverageA is a mathematical function that returns the average of a group of numeric values, rows, columns, or cells. AverageA includes #MISSING and #ERROR cells, which are treated as zero values when obtaining the average.



Note:

#MISSING and #ERROR are included only for rows or columns that are not suppressed.

The function syntax:

```
AverageA(arguments) or AvgA(arguments)
```

where *arguments* is one or more of these arguments:

Table B-8 Arguments for the AverageA Function

Argument	Description
numeric	A numeric value. For example, AverageA (10, 20, 30) returns the value 20. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment(range)]. Property</code> . For example, <code>AvgA(Grid1.row[4(3:5)])</code> returns the average of form grid1, row segment 4, range 3 through 5.
function	An embedded function

Example

In the following example, a grid has 4 rows with the values 10, 20, 30, and, #ERROR. The following formula in the fifth row returns the value 15:

```
AverageA([1:4])
```

Count

Count is a mathematical function that returns the number of values in a group of numeric values, rows, columns, or cells. Count excludes #MISSING and #ERROR when obtaining the count. The function syntax:

```
Count (arguments)
```

where *arguments* is one or more of these arguments:

Table B-9 Arguments for the Count Function

Argument	Description
numeric	A numeric value. For example, Count (10, 20, 30) returns the value 3. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property
function	An embedded function

Examples:

- The following example returns the count of three rows, 1, 6, and 8:

```
Count(row[1], row[6], row[8])
```

- The following example returns the count of 3 columns:

```
Count( column[E], column[G], column[I] )
```

- The following example calculates the count of the cell located at row 4, column D:

```
Count( cell[D,4] )
```

- The following example calculates the count of aggregate row 3 in grid 5:

```
Count(grid1.row[3])
```

CountA

CountA is a mathematical function that returns the number of values in a group of numeric values, rows, columns, or cells. CountA includes #MISSING and #ERROR cells when obtaining the count only for rows or columns that are not suppressed. The function syntax:

```
CountA(arguments)
```

where *arguments* is one or more of these arguments:

Table B-10 Arguments for the CountA Function

Argument	Description
numeric	A numeric value. For example, CountA(10, 20, 30, 50) returns the value 4. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: CountA(GridName.GridElement[segment(range)]) .property
function	An embedded function

Examples:

- In the following example, if a grid has 4 rows with the values 10, 20, 30, and, #ERROR. The following formula in the fifth row returns the count of four rows:

```
CountA([1:4])
```

- The following example returns the count of four rows:

```
CountA(row[1], row[6], row[8] row[where data yields #ERROR])
```

Difference

Difference is a mathematical function that returns the absolute value of the difference of a numeric value, row, or column subtracted from another numeric value, row, or column. This is also known as the variance. The function syntax:

```
Difference(arg1, arg2)
```

where *arg2* is subtracted from *arg1* and are one or more of the following arguments:

Table B-11 Arguments for the Difference Function

Argument	Description
numeric	A numeric value. For example, Difference (3, 5) returns the absolute value 2. Numeric values can include decimals and negative values.
row, column, or reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment(range)].Property</code> The following example returns the difference of two rows in form grid1: <code>Difference(grid1.row[1], grid1.row[6])</code>
function	An embedded function



Note:

The Difference function returns the absolute value of *arg2* subtracted from *arg1*, whereas the minus sign in subtraction negates a number.

Examples:

- The following example returns the absolute value of 8:

```
Difference(3, -5)
```

- The following example calculates the difference of two aggregate columns:

```
Difference( column[E], column[G] )
```

 **Note:**

You can type the text label "Difference" or "Variance."

Eval

Eval is a mathematical function that evaluates an expression. You use Eval as an embedded function argument to consolidate multiple expressions into one expression. The function syntax:

```
Eval(expression)
```

where *expression* is one or more of these arguments:

Table B-12 Arguments for the Eval Function

Argument	Description
numeric	A numeric value. Numeric values can include decimals and negative values.
row, column, or reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment(range)].Property</code>
function	An embedded function
operators	Use any of the supported arithmetic operators (+, -, *, /, ^, %, and so on).

Example:

The following example divides row 1 by row 2 and then rounds the data to four places:

```
Round(Eval([1]/[2]),4)
```

IfThen, If

IfThen is a conditional function that returns a value when the condition equals True, and another value when the condition equals False.

The function syntax:

```
IfThen(Condition, TrueParameter, FalseParameter)
```

- *Condition* is a logical expression that evaluates to true or false. Full conditional logic can be used as well as complex Boolean operators (And, Not, and Or). A *condition* can also test for #MISSING and #ERROR values. See the following table for a list of valid conditional operators.
- *TrueParameter* and *FalseParameter* are any valid expression that are evaluated based on the outcome of the condition.

The following table describes the conditional operators that are fully supported. Alternate syntax is listed wherever it's supported by a conditional operator.

Table B-13 Conditional Operators

Conditional Operator	Syntax	Logic
Equal To	<i>expression</i> = <i>expression</i>	<p>Tests whether the left expression is equal to the right expression.</p> <p>The routine that evaluates the condition doesn't consider any rounding. If rounding is required, use the Round function.</p> <p>Example: 1 = 4</p> <p>Returns false</p>
Greater Than	<i>expression</i> > <i>expression</i>	<p>Tests whether the left expression is greater than the right expression.</p> <p>Example: 1 > 4</p> <p>Returns false</p>
Greater Than or Equal To	<i>expression</i> >= <i>expression</i>	<p>Tests whether the left expression is greater than or equal to the right expression.</p> <p>The correct syntax is ">=". The syntax ">=" isn't supported.</p> <p>Example: 1 >= 4</p> <p>Returns false</p>
Less Than	<i>expression</i> < <i>expression</i>	<p>Tests whether the left expression is less than the right expression.</p> <p>Example: 1 < 4</p> <p>Returns true</p>
Less Than or Equal To	<i>expression</i> <= <i>expression</i>	<p>Tests whether the left expression is less than or equal to the right expression.</p> <p>The correct syntax is "<=". The syntax "<=" isn't supported.</p> <p>Example: 1 <= 4</p> <p>Returns true</p>
Not Equal To	<i>expression</i> <> <i>expression</i> <i>expression</i> != <i>expression</i>	<p>Tests whether the left expression isn't equal to the right expression.</p> <p>The routine that evaluates the condition doesn't consider any rounding. If rounding is required, use the Round function.</p> <p>Examples: 1 <> 4</p> <p>Returns true</p> <p>1 != 4</p> <p>Returns true</p>
IsMissing	IsMissing (<i>reference</i>) IsMiss (<i>reference</i>)	<p>Tests whether the reference contains a #MISSING result.</p> <p>If the reference is an expanded row or column, then all resulting cells must be #MISSING in order for the condition to be true.</p> <p>Example: IsMissing([1])</p> <p>Returns true if row 1 has a #MISSING value.</p>

Table B-13 (Cont.) Conditional Operators

Conditional Operator	Syntax	Logic
IsError	IsError (<i>reference</i>) IsErr (<i>reference</i>)	Tests whether the reference contains an #ERROR result. If the reference is an expanded row or column, all resulting cells must be #ERROR in order for the condition to be true. Only formula rows and columns can result in #ERROR. Example: IsError([2]) Returns true if row 2 has a #ERROR value.
IsNonNumeric	IsNN (<i>reference</i>) IsNonNumerid (<i>reference</i>) IfNN (<i>reference</i>) IfNonNumber (<i>reference</i>)	Tests whether the reference contains a #MISSING or #ERROR results. If the reference is an expanded row or column, all resulting cells must be #MISSING and/or #ERROR in order for the condition to be true. Example: IsNN([3]) Returns true if row 3 has a #MISSING or #ERROR value.
Parenthesis	(<i>condition</i>)	Used to group a condition. Used mostly for visual clarity. Example: (1 > 4) Returns false

Table B-14 Conditional Operators

Complex Conditions	Syntax	Logic
And	(<i>condition</i> AND <i>condition</i>) (<i>condition</i> & <i>condition</i>)	Complex condition used to compare two conditions. Returns true if all conditions result in true. Example: (1 > 4 AND 5 > 2) Returns false
Not	NOT (<i>condition</i>) ! (<i>condition</i>)	Used to negate the result by reversing the result of the condition. Example: Not (1 > 4) Returns true
Or	(<i>condition</i> OR <i>condition</i>) (<i>condition</i> <i>condition</i>)	Complex condition used to compare two conditions. Returns true if any of the conditions result in true. Example: (1 > 4 OR 5 > 2) Returns true

Notes on Conditions

- *Expression*: Any valid formula expression. The expression can be any combination of a constant (integer or real number), a reference, or another function.
- *Reference*: Any valid reference; thus the IFNN reference property can be used as part of the reference.

- *Condition*: Any valid condition applied to the complex conditions And, Not, and Or. Those operators can have embedded conditions.

 **Note:**

And, Not, and Or operators require surrounding parentheses.

- When any *expression* within the condition returns an #ERROR or #MISSING value, the If function returns #MISSING or #ERROR. This doesn't apply when you use the IsMissing, IsError, or IsNonNumeric conditions.

Complex Conditions

Complex conditions And, Or, and Not are fully supported. However, they must be surrounded by parentheses.

Valid example:

```
If ( ([A] > [B] and [A] > 1000), [A], [B])
```

Invalid example:

```
If ( [A] > [B] and [A] > 1000, [A], [B])
```

Max

Max is a mathematical function that returns the maximum value in a group of numeric values, rows, columns, or cells. The function syntax:

```
Max (arguments)
```

where *arguments* is one or more of these arguments:

Table B-15 Arguments for the Max Function

Argument	Description
numeric	A numeric value. For example, Max (10, 20, 30) returns the value 30. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property.
function	An embedded function

Examples:

- The following example returns the maximum value in rows 1, 6, and 8:

```
Max(row[1], row[6], row[8])
```


- The following example calculates the maximum of the sums of aggregate rows:

```
Max(row[1].sum, row[2].sum, row[3].sum)
```

Min

Min is a mathematical function that returns the minimum value in a group of numeric values, rows, columns, or cells. The function syntax:

```
Min (arguments)
```

where *arguments* is one or more of these arguments:

Table B-16 Arguments for the Min Function

Argument	Description
numeric	A numeric value. For example, Min (10, 20, 30) returns the value 10. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property
function	An embedded function

Examples:

- The following example returns the minimum value in rows 1, 6, and 8:

```
Min (row[1], row[6], row[8])
```

- The following example calculates the minimum of the sums of aggregate rows:

```
Min(row[1].sum, row[2].sum, row[3].sum)
```

Mod

Mod is a mathematical function that returns the remainder, or modulus, from a division. The function syntax:

```
Mod (arg1, arg2)
```

where *arg2* is the divisor and *arg1* and *arg2* are one of these arguments:

Table B-17 Arguments for the Mod Function

Argument	Description
numeric	A numeric value. For example, Mod (6, 4) returns the value 2. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property

Table B-17 (Cont.) Arguments for the Mod Function

Argument	Description
function	An embedded function

Example:

The following example divides 10 by 5 and returns the remainder of 0:

```
Mod (10,5) = 0
```

PercentOfTotal

PercentOfTotal is a mathematical function that returns the result of a numeric value, row, column, or cell divided by another numeric value, row, column, or cell which is multiplied by 100. The function syntax:

```
PercentOfTotal (arg1, arg2)
```

- where *arg1* is a component of the running total (*arg2*). Normally, this is a row or column reference.
- where *arg2* is the running total relative to *arg1*. Normally this is a cell reference containing the grand total.
- *arg1* is divided by *arg2*, with the result multiplied by 100. *arg1* and *arg2* are one or more of these arguments:

Table B-18 Arguments for the PercentOfTotal Function

Argument	Description
numeric	A numeric value. For example, PercentofTotal (100, 20) returns the value 500. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].Property
function	An embedded function

 **Note:**

This function requires two arguments.

Examples:

- The following example returns the value of 5 percent.

```
PercentofTotal (20, 400)
```

- The following example divides the value of each cell in column A by the Total Mkt value in cell A5, multiplies the result by 100, and displays the resulting PercentOfTotal in column B. The formula:

```
PercentOfTotal ([A], [A,5]),
```

Results for the PercentOfTotal Function

Using the above example, the following table shows the PercentOfTotal results in column B:

		A	B
1		Sales	% Total
2	Mkt1	60	20%
3	Mkt2	120	40%
4	Mkt3	120	40%
5	Total Mkt	300	100%

Tip:

You enter the formula by clicking on the header for Column B and using the formula bar.

Pi

Pi is a mathematical function that returns the number 3.14159265358979, the mathematical constant, accurate to 15 digits. Pi is the ratio of the circumference of a circle to its diameter. The function syntax:

```
PI ()
```

Example:

The following example returns row 3 divided by the product of Pi and 2:

```
row[3] / (PI() * 2)
```

Product

Product is a mathematical function that multiplies all numbers or references and returns the product. The function syntax:

```
Product (arguments)
```

where *arguments* is one or more of these arguments:

Table B-19 Arguments for the Product Function

Argument	Description
numeric	A numeric value. For example, Product(2, 20) returns the value 40. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].property
function	An embedded function

Example:

The following example returns 40:

```
Product(2,20)
```

Random

Random is a mathematical function that returns a random number between 0.0 and 1.0. The function syntax:

```
Random()
```

Example:

The following example returns a random number between 0.0 and 1.0 and multiplies it by 1000:

```
Random() * 1000
```

Round

Round is a mathematical function that rounds a number up or down by the specified digits. The function syntax:

```
Round(arg1, integer)
```

where *arg1* is one or more of these arguments:

Table B-20 Arguments for the Round Function

Argument	Description
<i>numeric</i>	A numeric value. For example, Round(81.3987,3) returns the value 81.399. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].property
<i>function</i>	An embedded function

Integer specifies the number of digits to which you want to round the number:

- If *integer* is greater than zero, the number rounds to the specified number of decimal places.
- If *integer* is zero, the number rounds to the nearest integer.
- If *integer* is less than zero, the number is rounded to the left of the decimal point.

Examples:

The following example rounds to three decimals:

`Round(3594.5567, 3) = 3594.557`

The following example rounds to the nearest integer:

`Round(3594.5567, 0) = 3595`

The following example rounds to the thousands. This is also known as scaling:

`Round(3594.5567, -3) = 4000`

Sqrt

Sqrt is a mathematical function that returns the square root of a numeric value, row, column, or cell. The syntax for the Sqrt function:

`Sqrt(argument)`

where *argument* is one of these arguments:

Table B-21 Arguments for the Sqrt Function

Argument	Description
<i>numeric</i>	A numeric value. For example, <code>Sqrt(100)</code> returns the value 10. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment(range)].property</code>
<i>function</i>	An embedded function

Example

The following example returns the value of 4:

`Sqrt(16)`

Sum

Sum is a mathematical function that returns the summation of a group of numeric values, rows, columns, or cells.

The syntax for the Sum function:

```
Sum (arguments)
```

where *arguments* is one or more of these arguments:

Table B-22 Arguments for the Sum Function

Argument	Description
<i>numeric</i>	A numeric value. For example, Sum(10, 20, 30) returns the value 60. Numeric values can include decimals and negative values.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: GridName.GridElement[segment(range)].property
<i>function</i>	An embedded function

Examples:

- The following example returns the value 30:

```
sum(10,20)
```

- The following example returns the sum of three rows:

```
sum(row[1],row[6],row[8])
```

- The following example calculates the sum of three aggregate columns:

```
sum(column[E], column[G], column[I])
```

When a formula row includes IDESC, the sum includes all of the parents and their descendants.

For example, a form is created with the following rows (and each member has children):

```
IDESC("Mem1"), IDESC("Mem2"), IDESC("Mem3"), IDESC("Mem4")
```

If a formula row is added with the following formula:

```
SUM(ROW[1],ROW[2],ROW[3],ROW[4])
```

When the form is opened for data entry, the formula row will return the sum of all the parents and their children.

Truncate/Trunc

Truncate is a mathematical function that removes the specified number of digits from numeric values.

Syntax:

```
Trunc (arg1, integer)
```

- where *arg1* is one of these arguments:

Table B-23 Arguments for the Truncate/Trunc Function

Argument	Description
<i>numeric</i>	A numeric value; for example, 234.567.
row, column, or cell reference	A pointer to a row, column, or cell within a grid. References can be specified in several ways. The reference syntax: <code>GridName.GridElement[segment (range)].property</code>
<i>function</i>	An embedded function

- where *integer* specifies the number of digits you want to remove:
 - A positive *integer* determines the number of significant digits that remain to the right of the decimal point.
 - A zero (0) *integer* returns the integer located to the left of the decimal point.
 - A negative *integer* indicates the number of significant digits that are truncated to the left of the decimal point.

Examples:

The following statement uses a positive integer of 2. The first two digits to the right of the decimal point remain, and the following digit is removed:

```
Trunc(234.567, 2) = 234.56
```

The following statement uses a zero (0) integer. All digits to the right of the decimal point are removed:

```
Trunc(234.567, 0) = 234
```

The following statement uses a negative integer of -2. All digits to the right of the decimal point are removed and the last two digits of the integer are truncated.

```
Trunc(234.567, -2) = 200
```

 **Note:**

Formatting previously applied to a cell, column, or row is maintained when you use the Trunc function. The following example shows the results of a Trunc function where the cell value was previously formatted to display three decimal places:

```
Trunc(234.567, 0) = 234.000
```

Variance/Var

Variance is a financial function that evaluates the difference between the specified values based on account type for the current account. For example, for Expense or Liability accounts, a positive result represents a decrease, so the result appears as a negative number. You can use this function with these UDA account types: Asset, Liability, Equity, Revenue, and Expense.

Syntax:

Var (reference1, reference2)

where *reference1* and *reference2* are references to a row, column, or cell that correspond to members of the same Account dimension whose variance results are to be calculated.

Expected Results

The following table describes the expected results when using the Variance function with Accounts.

Table B-24 Expected Results when Using the Variance Function

Column A	Column B	Var ([A] , [B])=0	Var ([A] , [B])>0	Var ([A] , [B])<0
Asset	Asset	0	Returns a positive value	Returns a negative value
Liability	Liability	0	Returns a positive value	Returns a negative value
Equity	Equity	0	Returns a positive value	Returns a negative value
Revenue	Revenue	0	Returns a positive value	Returns a negative value
Expense	Expense	0	Returns a negative value	Returns a positive value

Variance Behavior

- The Variance function expects comparison of the same account type. When you compare two different account types, like Sales & Expense, the Variance function performs the straight math without applying the logic of the account type. For example:

Table B-25 Results for the Variance Function When Comparing Two Different Account Types

Sales	Expense	Result
-400	100	-500

- When the Variance function is applied to a dimension that isn't tagged as an Accounts type, an #ERROR results at runtime.
- #MISSING is treated as zero (0), unless specified differently using the ifnonnumber property.

Examples

The Variance function accepts cell, column, or row references only.

Table B-26 Syntax Examples for the Variance Function

Syntax	Example
<i>Sample syntax referencing a column:</i>	<i>Var ([A] , [B])</i>

Table B-26 (Cont.) Syntax Examples for the Variance Function

Syntax	Example
Sample syntax referencing a row:	Var ([3], [4])
Sample syntax referencing a cell:	Var (Cell [3,A], [3,B])

In this example, the variance between column A (**Actual**) and column B (**Budget**) is calculated as:

Var ([A], [B])

This example produces the following report:

	Year		Product Market
	Actual	Budget	Variance
	=====	=====	=====
Sales (Income)	400,855	373,080	27,775
COGS (Expense)	179,336	158,940	-20,396

VariancePercent/VarPer

VariancePercent is a financial function that evaluates the difference, in percent, between the specified values based on account type for the current account. For example, for an Income, Flow, Asset, or Balance account, a positive result represents an increase, so the result appears as a positive number. For Expense or Liability accounts, a positive result represents a decrease, so the result appears as a negative number.

Syntax:

VarPer (*reference1*, *reference2*)

where *reference1* and *reference2* are references to a row, column, or cell that correspond to members of the same Account dimension whose VariancePercent results are to be calculated.

Expected Results

The following table describes the expected results when using the VariancePercent function with Accounts tagged with the below UDAs.

Table B-27 Expected Results when Using the VariancePercent Function

Col A	Col B	VarPer ([A] , [B])=0	VarPer ([A] , [B])>0	VaPer ([A] , [B])<0
Asset	Asset	0	Returns a positive value	Returns a negative value
Liability	Liability	0	Returns a negative value	Returns a positive value
Equity	Equity	0	Returns a positive value	Returns a negative value
Revenue	Revenue	0	Returns a positive value	Returns a negative value
Expense	Expense	0	Returns a negative value	Returns a positive value

VariancePercent Behavior

- The VariancePercent function expects comparison of the same account type. When you compare two account types, like Sales & Expense, the VariancePercent function performs the straight math without applying the logic of the account type. For example:

Table B-28 Expected Results of the VariancePercent Function when Two Account Types are Compared

Sales	Expense	Result
-400	100	-5.

- When the VariancePercent function is applied to a dimension that isn't of type Accounts, an #ERROR results at runtime.
- #MISSING is treated as zero (0), unless specified differently using ifnonnumber property.

Examples

The VariancePercent function accepts, cell, column, or row references only.

Table B-29 Syntax Examples of the VariancePercent Function

Syntax	Example
<i>Sample syntax referencing a column</i>	VarPer ([A] , [B])
<i>Sample syntax referencing a row</i>	VarPer ([3] , [4])
<i>Sample syntax referencing a cell</i>	VarPer (Cell [3,A] , [3,B])

In this example, the VariancePercent between column A (**Actual**) and column B (**Budget**) is calculated as follows:

VarPer ([A] , [B])

Example Result of the VariancePercent Function when Comparing Columns

This example produces the following report:

	Year Actual	Product Budget	Market <u>VariancePercent</u>
Sales (Income)	400,855	373,080	7%
COGS (Expense)	179,336	158,940	-13%

C

Optimizing the Application

Learn best practices for optimizing the performance of your applications.

Related Topics

- [Optimizing Performance](#)

Optimizing Performance

Use these methods to optimize performance:

- Strategically assign dimensions as dense or sparse and order them from most to least dense (see [About Sparse and Dense Dimensions](#), [About Reordering Dimensions](#), and [Editing Dimensions in the Simplified Dimension Editor](#)).
- Set the **Suppress Missing Blocks** option (see [Setting Form Grid Properties](#)).

See also:

- [Writing #MISSING Values](#)
- [Other Performance Optimization Tips](#)

About Reordering Dimensions

The order of dimensions is critical for the structure and performance of an application. Optimize performance when ordering dimensions:

- Make Period and Account dense, and order dense dimensions from most to least dense. The most dense is usually Period, followed by Account. Dense dimensions calculate faster than sparse dimensions.
- Separate sparse dimensions into aggregating and nonaggregating dimensions. Place aggregating dimensions before nonaggregating dimensions. Order sparse dimensions from most to least dense. Aggregating dimensions, such as Entity, consolidate children into the parent to create new data. Nonaggregating dimensions, such as Scenario, don't consolidate children to create data.

Writing #MISSING Values

#MISSING in a cell indicates that the cell contains no data, whereas zero in a cell is a data value. #MISSING decreases the database size and improves performance.

To write #MISSING to cells:

1. Select the cells to change.

You can select contiguous cells by clicking in the upper-left cell in the range, and then pressing Shift+Click to select the lower-right cell in the range. You can select rows and columns by clicking row and column headings. Select a range of rows or columns by using Shift+Click.

If the designer sets a form to suppress missing data, and an entire row contains #MISSING (no data), that row doesn't display on the form.

2. Take an action:

- Press Delete.
- Enter #missing.

You can also enter #MISSING using Smart Lists.

3. Click **Save**.

The cells are set to #MISSING when you save the form.

Other Performance Optimization Tips

- Set upper-level members in a dense dimension to Dynamic Calc.
- Clear unnecessary or historical data. For example, move historical data to a separate cube to reduce the database size in your current cube.
- Split large forms into multiple smaller forms having fewer rows and columns. Organize related forms into folders.
- Using account annotations affects performance, so use them sparingly.
- The first time the application is launched and forms are opened, caches are loaded, which takes more time than in subsequent sessions. So, before your users start using the application, launch the application and open the most commonly used forms to reduce the loading time for your users.

D

Understanding Application Artifacts

Learn about artifacts in your applications.

For each artifact, the following information is displayed:

- **Artifact:** Artifact name
- **Description:** Artifact description
- **Last Modified Time:** If this parameter is supported, reflects the time the artifact was imported. Some artifacts don't support the last modified time parameter.
- **Last Modified User:** If this parameter is supported, reflects the user who last modified the artifact. Some artifacts don't support the last modified user parameter.
- **Editable:** If yes, you can download the artifact to the desktop by right-clicking the artifact and selecting **Export Artifact for Edit**. After it's modified, you can import the artifact back into Planning by right-clicking the artifact and selecting **Import Artifact After Edit**.
- **Dependencies:** Lists artifact dependencies

Planning Artifacts

Planning artifacts are listed under the Planning node on the **Categories** tab of Migration.

Configuration Artifacts

Table D-1 Configuration Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Adhoc Options	Suppress options, precision options, replacement options, and other miscellaneous options that affect data in web grid	No	No	Yes: XML	Ad Hoc Forms
Data Load Settings	Parameters that users can set to enable data to be loaded directly into an Essbase database	No	No	Yes: XML	Associated Dimensions
Properties: Application Definition and Application Settings	Functionality that enables users to set preferences for aspects such as email notification, alias tables, and display options	No	No	Yes: XML	None
User Preferences	Preferences that users can set for applications, display, printing, and user variables	No	No	Yes: XML	User Variables

Table D-1 (Cont.) Configuration Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
User Variables	Dynamically render forms based on a users member selection, displaying only the specified entity; for example, a user variable named Department displays specific departments and employees	No	No	Yes: XML	Associated Dimensions

Essbase Data Artifacts



Note:

You import Essbase data only when migrating an application from production to production/test (cloning). You should not import Essbase data artifacts when you're doing an incremental update.

Table D-2 Essbase Data Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable on the File System?	Dependencies
Essbase Data	Planning Essbase data	No	No	No	None

Global Artifacts

Table D-3 Global Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Attribute Dimensions	Dimensions whose type enables analysis based on the attributes or qualities of dimension members	Yes	No	Yes: CSV	None
Auto Predict	Auto Predict prediction definitions	Yes	Yes	No	Associated Dimensions
Calculation Manager Rulesets	Objects that contain rules and other rulesets that can be calculated simultaneously or sequentially	Yes	Yes	Yes: XML	None
Custom Menus	Menus that Service Administrators create that are company- or application-specific. Users can right-click a member and select a menu item to open a URL, data form, or workflow.	Yes	No	Yes: XML	If menu is of type Workflow, then Approval Units
Dashboards	At-a-glance views of key information, organized and presented in a way meaningful to a business need.	Yes	Yes	Yes: XML	Associated Data Forms

Table D-3 (Cont.) Global Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Exchange Rates	A numeric value for converting one currency to another; for example, to convert 1 USD into EUR, the exchange rate of 0.8936 is multiplied with the U.S. dollar. The European euro equivalent of \$1 is 0.8936.	Yes	No	Yes: CSV	Currency, Period, and Year
Jobs	Customized actions	Yes	Yes	Yes: XML	Associated Dimensions
Approval Unit Hierarchies	Specifies which application approval units and members are part of the budget process	Yes	Yes	Yes: XML	Entity, Scenario, Version and other associated dimensions
Report Mappings	Maps dimensions between Planning applications and reporting applications to enable reporting on Planning data in a reporting application, aggregations and queries on Smart Lists, and linking Planning data to multiple reporting applications for consolidations	Yes	Yes	Yes: XML	Associated dimensions and Smart Lists
Schedules	Scheduling information of actions that are set to run at intervals.	Yes	Yes	Yes: XML	Associated Business Rules, Report Mappings, Jobs
Smart Lists	Custom drop-down lists that users access from data form cells (instead of entering data)	No	No	Yes: CSV	None
Spread Patterns	A custom spreading pattern that determines how data is distributed from a parent to its children. The pattern is available from the Mass Allocate and Grid Spread menus.	No	No	Yes: XML	None
Standard Dimensions	Dimensions associated with a single cube	Yes	No	Yes: CSV	None
Substitution Variables	Global placeholders for information that changes regularly	No	No	No	None
Task Lists	A detailed status list of tasks for a particular user	Yes	No	Yes: XML	If task is of type Data Form, then associated Data Form. If task is of type Workflow, then Approval Units.

Cube Artifacts

Table D-4 Cube Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Attribute Dimensions	A list of dimensions whose type enables analysis based on the attributes or qualities of dimension members	Yes	No	Yes: CSV	None

Table D-4 (Cont.) Cube Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Calculation Manager Rules	Objects that can contain templates and calculations that are grouped in components	Yes	Yes	Yes: XML	None
Data Forms	A grid display that enables users to enter data into the database from an interface such as a web browser, and to view and analyze data or related text. Certain dimension member values are fixed, giving users a specific view into the data. Forms can include predefined data validation rules that help implement business policies and practices. Errors or warnings are generated on the data form if entered data violates a validation rule.	Yes	No	Yes: XML	Associated menus, user variables, and dimensions
Standard Dimensions	A list of dimensions associated with a single cube	Yes	No	Yes: CSV	Attribute Dimensions, if any
Substitution Variables	Global placeholders for information that changes regularly	No	No	No	None

Relational Data Artifacts

Table D-5 Relational Data Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Account Annotations	Comments associated with accounts that can be plain text or URL links	No	No	Yes: XML	Account, Entity, Scenario, and Version Dimensions
Announcements	Announcements that typically represent company information, demonstrations, and so on	No	No	Yes: XML	None
Cell Texts	Text annotations associated with cells	No	No	Yes: XML	None
Approval Units	A data slice at the intersection of a scenario, version, and entity; the basic unit for preparing, reviewing, annotating, and approving plan data	No	No	Yes: XML	Entity, Scenario, and Version Dimensions
Supporting Detail	Calculations and assumptions from which the values of cells are derived	No	No	Yes: XML	None
Tablet Access	Planning artifacts that are enabled for mobile devices	No	No	Yes: XML	None
Text Values	Text that is stored as data in cells whose data type is text	No	No	Yes: XML	None

Security Artifacts

**Note:**

Access permissions are a set of operations that a user can perform on a resource.

Table D-6 Security Artifacts

Artifact	Description	Last Modified Time	Last Modified User	Editable	Dependencies
Access Permissions: Users	Company personnel who are provisioned as valid system users	No	No	Yes: XML	None
Access Permissions: Groups	A container for assigning similar access permissions to multiple users	Yes	No	Yes: XML	None

E

Using Smart View to Manage Applications

Understand how to manage applications in Smart View, including installation, controlling the display, downloading templates, and creating, updating, and deleting applications. Also learn about the Planning Admin Extension and Office AutoCorrect.

Related Topics

- [About Managing Applications in Smart View](#)
- [Installing Smart View and the Admin Extension for Application Management](#)
- [Controlling the Display of Application Management Options in Smart View](#)
- [Downloading the Application Templates](#)
- [Creating an Application](#)
- [Working with Artifacts in the Application Template](#)
- [Updating an Application in Smart View](#)
- [Deleting an Application](#)
- [Planning Admin Extension and Office AutoCorrect](#)

About Managing Applications in Smart View

Applies to: FreeForm, Planning

Service Administrators can use Excel to create and manage Planning, Planning Modules, and FreeForm applications in Oracle Smart View for Office and Oracle Smart View for Office (Mac and Browser).

Note:

You must have Service Administrator privileges to create and manage applications in Smart View and Smart View (Mac and Browser).

Using a downloadable Excel template workbook, you can quickly create, model, and manage applications in Smart View. By modifying the worksheets within the application template workbook, you can define application properties, dimension and member properties, security (access permissions), and substitution variables to fit your needs. You can also load data from the template workbook.

Once the application is created, it's available to users from Oracle Smart View for Office, Oracle Smart View for Office (Mac and Browser), and the web application. Service Administrators can further update and refresh the application in Smart View as needed. You can also delete the application from Smart View.

Application management in Smart View is a quick and easy way to get an application up and running in your business process environment.

To begin, see the topics in [Installing Smart View and the Admin Extension for Application Management](#).

After installation, get started by downloading and then editing the application template workbook available in Smart View. Or, download the application template zip file from **Downloads** menu in your business process. The template zip file contains starter workbooks for Planning, Planning Modules, and FreeForm applications, and a sample Planning application workbook. See [Downloading the Application Templates](#).

 **Note:**

Starting in 22.03, a single Excel template workbook, `PlanningApplicationTemplate_FreeForm.xlsx`, allows you to create a multi-cube application (any combination of up to 12 ASO and BSO cubes) for your FreeForm business process.

The multi-cube FreeForm template replaces the two previously available templates that allowed you to create a single-cube FreeForm ASO or BSO application.


Then continue with [Creating an Application](#), using the information in [Working with Artifacts in the Application Template](#) to modify the template according to your requirements.

 **Note:**

For information on creating applications in the web, see the documentation for your business process:

- [Creating a Planning Application in Administering Planning](#)
- [Creating a FreeForm App in Administering FreeForm](#)
- [Setting Up Your Application in Administering Planning Modules](#)

Videos

Your Goal	Watch This Video
Learn about creating an application in Smart View. The video shows the process of creating a Planning application using Oracle Smart View for Office, but the concepts also apply to Oracle Smart View for Office (Mac and Browser), as well as the FreeForm and Planning Modules business processes.	 Overview: Creating and Managing Planning Cloud Applications Using Smart View

Installing Smart View and the Admin Extension for Application Management

Most procedures described in this appendix are performed within Smart View, with the exception of [Controlling the Display of Application Management Options in Smart View](#) and [Downloading the Application Template Zip File from the Web Interface](#).

 **Note:**

Application management is supported for these Oracle Enterprise Performance Management Cloud business processes: Planning, Planning Modules, and FreeForm.

Before you begin, ensure the following depending on whether you plan to use Windows-based Oracle Smart View for Office, Oracle Smart View for Office (Mac and Browser), or both:

- **Windows-based Smart View:** Install Smart View.
The Admin Extension is not required to use the application management features in Windows-based Smart View.
See [Installing Windows-based Oracle Smart View for Office](#)
- **Smart View (Mac and Browser):** Deploy Smart View (Mac and Browser) with the Dimension Editor options selected.
You must select the Dimension Editor options in order to work with the application templates in Smart View (Mac and Browser).
See [Deploying Oracle Smart View for Office \(Mac and Browser\) with the Admin Extension](#)

Installing Windows-based Oracle Smart View for Office

To use the Windows client-based version of Smart View, see Downloading and Installing Clients in *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for instructions on installing Smart View.

 **Note:**

The Admin Extension is not required with Windows-based Smart View when working with application management.

After installation, get started by downloading and then editing the application template workbook available in Smart View or from the template download zip file in the web.

- By default, you can download the Planning application workbook template directly from Smart View.
- Or, download the application template zip file from the Downloads page of the Planning, Planning Modules, or FreeForm business process. The template zip file contains starter application template workbooks for these business processes, along with a sample Planning application workbook.

Deploying Oracle Smart View for Office (Mac and Browser) with the Admin Extension

To use the Mac- or browser-based version of Smart View, you must deploy a Smart View (Mac and Browser) manifest file with the Dimension Editor options enabled.

See the following topics in *Deploying and Administering Oracle Smart View for Office (Mac and Browser)* for instructions on deploying Smart View (Mac and Browser) with the Dimension Editor options enabled:

- Creating and Saving the Manifest File

- Enabling the Admin Extension
- Sideloaded and Logging In or Deploying the Manifest File to Office 365 Users

Controlling the Display of Application Management Options in Smart View

When a new application is created in the web, in Oracle Smart View for Office, or in Oracle Smart View for Office (Mac and Browser), all application management options are displayed by default to Service Administrators in either version of Smart View.

You can choose to hide or display two of the options, **Update Application** and **Delete Application**, using the **Suppress Application Management Options in Smart View** option in Planning, Planning Modules, or FreeForm.

This setting, and the display of the application management options, applies to Service Administrators only.

To control the display of the **Update Application** and **Delete Application** options in Smart View:

1. From the Home page, click **Application**, and then click **Settings**.
2. Choose a setting for **Suppress Application Management Options in Smart View**:
 - **Yes**: Application options are not displayed in Smart View.
 - **No**: Default. Application options are displayed in Smart View.
3. Click **Save**.

Note:

Any time a new application is created, whether in the web, in Oracle Smart View for Office, or in Oracle Smart View for Office (Mac and Browser), the **Suppress Application Management Options in Smart View** setting defaults to **No** and the **Update Application** and **Delete Application** options will automatically be displayed. To hide the options, perform the above procedure.

Downloading the Application Templates

Related Topics


- [Downloading the Template in Smart View](#)
- [Downloading the Application Template Zip File from the Web Interface](#)

Downloading the Template in Smart View

When you're logged into Smart View as a Service Administrator, the Download Template command is available in the Smart View Panel on Windows and in the Smart View Home panel on the Mac and in the browser.

The default template that you download can be used immediately to begin creating a Planning application. Or, you can modify the template to create your own custom application.

To download the default application template from Smart View:

1. Log in to the applicable data source in Smart View.
2. Perform an action:
 - In the Smart View Panel (Windows), at the bottom of the panel, click the **Download Template** command.
 - In the Smart View Home panel (Mac and Browser), click , and select **Download Template** from the drop-down menu.

If prompted, allow the file to be created in your cloud repository.

The default application template, `PlanningApplicationTemplate.xlsx`, is opened. The default template contains the basic elements required to begin creating a standard Planning application.

You can edit the default template to create a custom application, as described in [Working with Artifacts in the Application Template](#).

To download the Planning Modules, FreeForm, or sample Planning templates, download the application template zip file from the web, described in [Downloading the Application Template Zip File from the Web Interface](#).

Downloading the Application Template Zip File from the Web Interface

When you're logged into Planning, Planning Modules, or FreeForm as Service Administrator, you can download a zip file containing these application template workbook files:

- `PlanningApplicationTemplate.xlsx`: Creates a Planning application.
- `PlanningApplicationTemplate_epbcs.xlsx`: Creates a Planning Modules application.
- `PlanningApplicationTemplate_FreeForm.xlsx`: Creates a FreeForm application.
- `PlanningApplicationTemplate_sample.xlsx`: Creates the Planning sample application, Sample.

Note:

Starting in 22.03, a single Excel template workbook, `PlanningApplicationTemplate_FreeForm.xlsx`, allows you to create a multi-cube application (any combination of up to 12 ASO and BSO cubes) for your FreeForm business process.

The multi-cube FreeForm template replaces the two previously-available templates that allowed you to create a single-cube FreeForm ASO or BSO application.

To download the application template zip file:

1. From the computer where you want to install or deploy the client software, access a business process instance.
2. On the Planning, Planning Modules, or FreeForm Home page, access **Settings and Actions** by clicking your user name at the top right corner of the screen.
3. Select **Downloads**.

4. In the **Downloads** page, Planning Extensions section, click **Download for Application Templates**.
5. Save the zip file locally or to a server location that you can access, and unzip the contents. You should now have these files saved:
 - `PlanningApplicationTemplate.xlsx`
 - `PlanningApplicationTemplate_epbcs.xlsx`
 - `PlanningApplicationTemplate_FreeForm.xlsx`
 - `PlanningApplicationTemplate_sample.xlsx`
6. Open the template file to work with in Excel and proceed with [Creating an Application](#), using the information in [Working with Artifacts in the Application Template](#) to modify the template according to your requirements.

Creating an Application

From Oracle Smart View for Office and Oracle Smart View for Office (Mac and Browser), Service Administrators can create a new application based on either the downloaded template with no modifications or a modified template. In either case, the template must adhere to template rules and guidelines.

When you create an application, you can:

- Define cubes
- Define dimensions
- Add a limited amount of data
- Define security and access permissions
- Define substitution variables

Only Service Administrators can create an application and only when no application exists in the cloud business process. Once an application is created, the option is no longer available in the Smart View Panel or Smart View Home panel.

Before you begin, you should launch Excel and, from Smart View, log in to the applicable data source.

To create a new application in Smart View:

1. If you have not already done so, perform one of the following actions:
 - Download the application template for Planning as described in [Downloading the Template in Smart View](#).
Downloading the application template simply opens the template in Smart View.
 - Download and unzip the application template zip file as described in [Downloading the Application Template Zip File from the Web Interface](#), then open one of the template files.
 - Open a saved template file.


An Excel application template workbook must be open when creating an application.

2. **Optional:** Edit and then save the application template as needed.

See [Working with Artifacts in the Application Template](#) for information on modifying the worksheets in the application template workbook.

3. With the application template workbook open in Smart View, select **Create New Application**:
 - Oracle Smart View for Office (Windows):

In the tree in the Smart View Panel, select the server name to access the **Create New Application** command at the bottom of the panel. You can also right-click the server name to access the **Create New Application** command.
 - Oracle Smart View for Office (Mac and Browser):

In the Smart View Home panel, click the Actions button, , and then select **Create New Application** from the drop-down menu.

The application creation status appears in the lower left corner of Excel.

4. When the application creation process is complete, verify that the application appears in the Smart View Panel (Windows) or Smart View Home panel (Mac and Browser).
 - Oracle Smart View for Office (Windows):

The application name is displayed in the tree in the Smart View Panel. Expand the application name to view folders and cubes.
 - Oracle Smart View for Office (Mac and Browser):

In the Smart View Home panel, the application folders and cubes are displayed. The application name is not displayed.

Note that only one application per cloud business process is allowed. Once an application is created, the **Create New Application** command no longer appears in the Application Management popup window.

The application is now available to the applicable users.

Next steps include updating the application template workbook. You can also delete the application and create a new one. See:

- [Working with Artifacts in the Application Template](#)
- [Updating an Application in Smart View](#)
- [Deleting an Application](#)

Working with Artifacts in the Application Template

Related Topics

- [About Working with Artifacts in the Application Template](#)
- [Application Definition](#)
- [Dimension Definition](#)
- [Attribute Dimension Definition](#)
- [Data Definition](#)
- [Substitution Variable Definition](#)
- [Security Definition](#)
- [Advanced Settings Definition](#)

About Working with Artifacts in the Application Template

Editing the application template involves editing Excel worksheets in the application workbook.

The application template workbook contains sheets for defining application properties, cubes, dimension and member properties, substitution variables, and security. You can also load data using the template.

Application Definition

In the application template workbook, the Definition worksheet defines your application and cubes. Using the application definition worksheet provided in the template zip file as your starting point, you can edit the worksheet provided to suit your requirements. You can also use the Sample application template file as your guideline for a standard application or adapt it to create a Planning Modules or FreeForm application.

Follow this workflow for setting up a data worksheet in your application template workbook:

1. [Define the Worksheet Name](#)
2. [Define the Worksheet Type](#)
3. [Define Application Properties](#)
4. [Define Cubes](#)

Define the Worksheet Name

The worksheet name is in the Excel worksheet tab. The first tab in the workbook is for the application definition worksheet. Ensure that the application definition worksheet is named, Definition. For example:



Define the Worksheet Type

In cell A1 in the application worksheet, type Application Definition for the worksheet type. In [Figure 1](#), cell A1 contains the worksheet type, Application Definition.

Figure E-1 Worksheet Type and Application Properties Shown in Application Definition Worksheet

	A	B
1	Application Definition	
2		
3	Application Name	PBCS
4	Description	PBCS Standard Application
5	Application Type	Standard
6	Planning Frequency	Monthly
7	Start Year	2010
8	End Year	2019
9	First Month of Fiscal Year	January
10	Weekly Distribution	Even
11	Main Currency	USD
12	Multi Currency	No
13	Multi Currency Type	Standard
14	Sandboxes	Yes
15	Task Flow Type	EPM Task Manager

Define Application Properties

Application properties are the basic information needed to create an application. In general, only the Application Name, Application Description, and Application Type are required properties. For all other properties, if not specified, the default values will be provided during application creation.



Note:

You can create the FreeForm app with only the application properties and no dimensions, attribute dimensions, security (access permissions), or substitution variables in the workbook.

Table 1 shows the supported properties, their default values, and valid values.

Table E-1 Application Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Application Name	Yes	Text			Name of Planning application
Description	Yes	Text			Application description
Application Type	Yes	Text	Standard	Standard: An advanced application with two cubes and the option to add more later Enterprise: Also referred to as EPBCS Advanced FreeForm: A FreeForm application	Similar to choices on web interface
Planning Frequency	No	Text	Monthly	Monthly Weekly Quarterly Custom	
Weekly Distribution	No	Text	445	Even 445 454 544	Applicable for Monthly Planning frequency
Periods Per Year	No	Numeric	13		Only for Custom Planning Frequency

Table E-1 (Cont.) Application Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Prefix	No	Text	TP		Only for Custom Planning Frequency
Start Year	No	Numeric	2010		Year in 4 digits
End Year	No	Numeric	2019		Year in 4 digits
First Month of Fiscal Year	No	Text	January	Jan through Dec	Only for Monthly Planning Frequency
First Fiscal Year Start Date	No	Date			Only for Quarterly or Custom Planning frequency
Rolling Forecast	No	Boolean	Yes	True False Yes No	Only for Monthly Calendar
Rolling Forecast Period Duration	No	Numeric	6	1 to 36	Only when Rolling Forecast is True
Main Currency	No	Text	USD	Any supported currency code	
Multi Currency	No	Boolean	Yes	True False Yes No	
Multi Currency Type	No	Text	Standard	Standard Simplified	Standard: May choose between Standard and Simplified. Default is Simplified Enterprise: Default type is Simplified
Sandboxes Also referred to as Sandbox Enabled	No	Boolean	Yes	True False Yes No	

Table E-1 (Cont.) Application Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Task Flow Type	No	Text	EPM Task Manager	EPM Task Manager Task List	Defaults to EPM Task Manager if entry is missing or typed incorrectly. Note: This option does not apply to FreeForm applications.

Define Cubes

In the application worksheet, the same sheet where you define the application properties, list all cubes.

To define cubes in the application worksheet, add a line with the label, `Cubes` after the application definition section. For example, in [Table 2](#), a line with the word `Cubes` is added to line 18 of the worksheet.

In the next row, add the `Name` label to column A, and the `Type` label to column B.

Figure E-2 Cube Definition Section of Application Definition Worksheet

	A	B
18	Cubes	
19	Name	Type
20	Plan1	
21	Plan2	
22	Plan3	
23	VisASO	ASO
24	Vis1ASO	ASO

[Table 2](#) shows the properties related to cube definition. Only the cube name is required. For the Type column, use BSO or ASO. Note that if the type is left blank, BSO is used by default.

All application types, Planning, Planning Modules, and FreeForm, support multiple cubes and any combination of BSO and ASO cubes.

Table E-2 Cube Properties

Header Name	Required	Comments
Name	Yes	Name of the cube

Table E-2 (Cont.) Cube Properties

Header Name	Required	Comments
Type	BSO ASO	BSO is the default. If cell is left blank, BSO is used

Dimension Definition

In the template workbook, create a new worksheet for each dimension in your application. You can use the worksheets provided in the templates, including the Sample application template, as your guide.

Follow this workflow for setting up a dimension worksheet in your application template workbook:

1. [Define the Worksheet Name](#)
2. [Define the Worksheet Type](#)
3. [Define the Dimension Name](#)
4. [Define Dimension Properties](#)
5. [Define Members](#)

Define the Worksheet Name

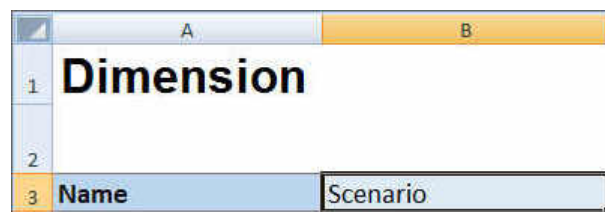
Define the worksheet name in the Excel worksheet tab. For a dimension worksheet name, use the dimension name prefixed with "Dim.". For example, for the Scenario dimension, you would name the worksheet `Dim.Scenario`. For example:



Define the Worksheet Type

In cell A1 in the dimension worksheet, type `Dimension` for the worksheet type. In [Figure 1](#), cell A1 contains the worksheet type, `Dimension`.

Figure E-3 Worksheet Type and Dimension Name Shown in a Dimension Worksheet of Application Template



Define the Dimension Name

In the dimension worksheet, type the dimension name. In [Figure 1](#), cell B3 contains the dimension name, *Scenario*.

If the dimension name that you provide doesn't exist, then a new custom type dimension is automatically created when you create the application.

Define Dimension Properties

You can define dimension properties directly on the dimension worksheet. Using the Type property, you can specify user-defined names for the Account, Year, and Entity dimensions and then map them to the Accounts, Year, or Entity dimension types. You can also define any other custom dimensions as you require. The templates in the template zip file includes example Accounts, Year, and custom dimensions and their properties to guide you.

 **Note:**

You can create the FreeForm app with no dimensions or any other application properties (such as attribute dimensions, security (access permissions), and substitution variables) in the workbook.

Table E-3 Dimension Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Name	Yes	Text			Name of the dimension
Type	No	Text		Account Period Entity	If this property is omitted, or no value is supplied, then this dimension is interpreted as a custom dimension.
Description	No	Text			An optional dimension description.
Alias	No	Text	None	The alias for the dimension	Aliases are alternate name for dimension members.
Alias Table	No	Text	No	The alias table	The default alias table for the application.

Table E-3 (Cont.) Dimension Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Hierarchy Type	No	Text	Not Set	Not Set Stored Dynamic Multiple	Available for dimensions bound to an aggregate storage cube. Aggregate storage dimensions are automatically enabled to support multiple hierarchies. The first hierarchy in a multiple hierarchy dimension must be Stored.
Density	No	Boolean	Sparse	Dense Sparse	Sparse dimensions lack data values for the majority of member combinations. Dense dimensions have data values for the majority of member combinations.
Two Pass Calculation	No	Boolean	No	Yes No	Recalculate values of members based on values of parent members or other members. Available for Account and Entity members with Dynamic Calc or Dynamic Calc and Store properties.

Table E-3 (Cont.) Dimension Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Apply Security	No	Boolean	No	Yes No	Allow security to be set on the dimension members, per the security laid out in the Security worksheet in the application template.
Partial Share	No	Boolean	No	Yes No	Alternate hierarchies are supported in the Entity dimension. One entity can have multiple parents, and contribute differently to each parent. These members are referred to as partially shared entities, where only a part of input data is shared across all instances of the entities.
Data Storage	No	Text	Store	Dynamic Calc and Store Dynamic Calc Store Never Share Shared Label Only	Data storage properties define where and when consolidations are stored. For example, by default, members are tagged as Store.
Performance Order	No	Numeric	None	A positive or negative number; for example: 1 -1	Evaluation order of dimensions in the application.

Table E-3 (Cont.) Dimension Properties

Property	Required	Value Type	Default Value	Valid Values	Comments
Evaluation Order	No	Numeric	None	A positive or negative number; for example: 1 -1	The order of your dimensions determines how your data calculations will perform. Evaluation Order enables you to specify which data type prevails when a data intersection has conflicting data types.
Display Option	No	Text	Member Name or Alias	Member Name or Alias to display members or aliases. Member Name:Alias displays members on the left and aliases on the right. Alias:Member Name displays aliases on the left and members on the right.	Set application default display option.

Define Members

In the dimension worksheet, under the *Members* heading in (cell A5 in the Planning application template), add members and their properties. Your list of members should conform to the format described in [Importing and Exporting Data and Metadata](#). You may add columns only for required properties. Any missing properties will be added based on application, cube, and dimension defaults.

Figure E-4 Example Dimension Worksheet for the Scenario Dimension in a Standard Planning Application

Member Name	Data Storage	Two Pass Calculation	Formula	Data Type	Hierarchy Type	Process Management Enabled	Start Year	Include BegBal
Variance	never share	FALSE	<none>	unspecified	none	TRUE	FY10	FALSE
Variance Comments	never share	FALSE	<none>	unspecified	none	TRUE	FY10	FALSE
Current	store	FALSE	<none>	unspecified	stored	TRUE	FY10	FALSE
No Scenario	store	FALSE	<none>	unspecified	stored	FALSE	FY10	TRUE
Actual	store	FALSE	<none>	unspecified	stored	TRUE	FY10	TRUE
Plan	store	FALSE	<none>	unspecified	stored	TRUE	FY14	TRUE
Adj Plan	store	FALSE	<none>	unspecified	stored	TRUE	FY14	TRUE
Revised Plan	store	FALSE	<none>	unspecified	stored	TRUE	FY14	FALSE
Forecast	store	FALSE	<none>	unspecified	stored	TRUE	FY14	TRUE
Act vs Plan	store	FALSE	<none>	unspecified	stored	FALSE	FY10	FALSE
Act vs Plan %	store	FALSE	<none>	percentage	stored	FALSE	FY10	FALSE
Act vs Forecast	store	FALSE	<none>	unspecified	stored	FALSE	FY10	FALSE
Forecast vs Plan	store	FALSE	<none>	unspecified	stored	FALSE	FY10	FALSE
Plan Adj %	store	FALSE	<none>	percentage	stored	FALSE	FY14	FALSE

Attribute Dimension Definition

In the template workbook, create a new worksheet for each attribute dimension in your application. You can use the attribute dimension worksheet provided in the template for the Vision application as your guideline.

Follow this workflow for setting up an attribute dimension worksheet in your application template workbook:

1. Define the Worksheet Name
2. Define the Worksheet Type
3. Define the Attribute Dimension Name
4. Define the Attribute Dimension Type
5. Define the Base Dimension
6. Define Attribute Members

Define the Worksheet Name

Define the worksheet name in the Excel worksheet tab. For the worksheet name, use the dimension name prefixed with "Attribute.". For example, for the Location attribute dimension, you would name the worksheet Attribute.Location. For example:



Define the Worksheet Type

In cell A1 in the attribute dimension worksheet, type Attribute for the worksheet type. In Figure 1, cell A1 contains the worksheet type, Attribute.

Figure E-5 Worksheet Type and Attribute Dimension Properties Shown in an Attribute Dimension Worksheet of Application Template

	A	B
1	Attribute	
2		
3	Name	Location
4	Type	Text
5	Base Dimension	Entity

Define the Attribute Dimension Name

In the attribute dimension worksheet, type the dimension name. In [Figure 1](#), cell B3 contains the attribute dimension name, *Location*.

Define the Attribute Dimension Type

In the attribute dimension worksheet, type the attribute dimension type. In [Figure 1](#), cell B4 contains the attribute dimension type, *Text*.

Valid attribute dimension types are:

- Text
- Numeric
- Boolean
- Date

Define the Base Dimension

In the attribute dimension worksheet, type the base dimension for the attribute dimension. In [Figure 1](#), cell B5 contains the base dimension, *Entity*.

Define Attribute Members

In the dimension worksheet, under the *Members* heading in cell A5, add attribute members and their properties. Your list of attribute members should conform to the format described in [Importing and Exporting Data and Metadata](#). You may add columns only for required properties. Any missing properties will be added based on application, cube, and dimension defaults.

Data Definition

With the application creation template, you can load up to 1,000 rows of data using the Essbase data format.

In the template workbook, create a worksheet for your application data, using the data worksheet provided in the template for the Sample application as your guideline. Or, edit the worksheet provided in the template.

Follow this workflow for setting up a data worksheet in your application template workbook:

1. [Define the Worksheet Name](#)

2. Define the Worksheet Type
3. Define the Cube Name
4. Define Data

Define the Worksheet Name

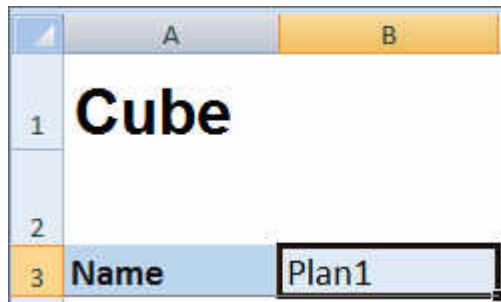
Define the worksheet name in the Excel worksheet tab. For the worksheet name, use the cube name where data will be loaded, prefixed with `Data.`. For example, to load data to the `Plan1` cube, you would name the worksheet `Data.Plan1` to indicate that you're loading data to `Plan1`. After the required `Data.` prefix, you may add any other indicators to the name to help you identify the data. For example, to show that you're loading actual data versus historical data to `Plan 1`, you would name the worksheet `Data.Plan1.Actual`.



Define the Worksheet Type

In cell A1 in the data worksheet, type `Cube` to signify that data in this sheet will be loaded to a cube. In [Figure 1](#), cell A1 contains `Cube` to indicate that the worksheet will contain data for loading to a cube.

Figure E-6 Worksheet Type and Cube Name Shown in Data Worksheet of Application Template



Define the Cube Name

In the data worksheet, type the name of the cube to which to load data. In [Figure 1](#), cell B3 contains the cube name, `Plan1`.

Define Data

Define data in the Essbase columnar format. Use "Dimension" as the header for each member intersection.

Substitution Variable Definition

In the application template workbook, include a worksheet for your substitution variables, using the substitution variable definition worksheet provided in the template for the Sample application as your guideline.

Substitution variables can be defined for Standard, Enterprise, and FreeForm applications.

Follow this workflow for setting up a substitution variable worksheet in your application template workbook:

1. [Define the Worksheet Name](#)
2. [Define the Worksheet Type](#)
3. [Define the Substitution Variables](#)

Define the Worksheet Name

Define the worksheet name in the Excel worksheet tab. Name the substitution variable definition worksheet, `Variables`. For example:



Define the Worksheet Type

In cell A1 in the data worksheet, type `Substitution Variables` to signify that data in this sheet will be loaded to a cube. In [Figure 1](#), cell A1 contains `Substitution Variables` to indicate that the worksheet will contain substitution variable information for loading to the specified cubes in the application.

Figure E-7 Worksheet Type and Substitution Variables Shown in Variables Worksheet of Application Template

	A	B	C
1	Substitution Variables		
2			
3	Cube	Name	Value
4	All Cubes	CurrYr	FY12
5	Plan3	CurrYr	FY11
6	Plan2	NextYr	FY13
7	All Cubes	CurVersion	Working

Define the Substitution Variables

In the Variables worksheet, using [Figure 1](#) for reference, add information for each substitution variable in the following format:

- In the **Cube** column, enter the name of the cube to which the substitution variable will apply. For example:
 - If a variable applies to all cubes, enter `All Cubes`
 - If a variable applies to a specific cube, enter the cube name; for example, enter `Plan3`

- If a variable applies to more than one cube, but not all cubes, list each cube name on its own row individually; for example, if a variable applies to both Plan2 and Plan3 only, add an entry for Plan2 on one row, and an entry for Plan3 on another row.
- In the **Name** column, enter the substitution variable name. In Figure 1, the substitution variable names are CurrYr, NextYr, and CurVersion.
- In the **Value** column, enter the value to be used for the substitution variable.

Security Definition

In the application template workbook, include a worksheet for user permissions, using the security definition worksheet provided in the template for the Vision application as your guideline.

Follow this workflow for setting up a user permissions worksheet in your application template workbook:

1. [Define the Worksheet Name](#)
2. [Define the Worksheet Type](#)
3. [Define Security Properties](#)

Define the Worksheet Name

Define the worksheet name in the Excel worksheet tab. Name the security worksheet where you'll define user permissions, `Security`. For example:



Define the Worksheet Type

In cell A1 in the data worksheet, type `Security` to signify that data in this sheet will be loaded to a cube. In Figure 1, cell A1 contains `Security` to indicate that the worksheet will list all user access permissions for the application.

Figure E-8 Worksheet Type Shown in Security Worksheet of Application Template

	A	B	C	D	E
1	Security				
2					
3	Name	Object Name	Access Mode	Flag	Object Type

Define Security Properties

Security properties include the user name and other user access information.

[Table 1](#) shows the supported security properties.

Table E-4 Security Properties

Property Name	Description
Name	Name of the user or group
Object Name	Artifact name
Access Mode	Permission granted. Default is NONE. Valid values: <ul style="list-style-type: none"> • READ • WRITE • READWRITE • LAUNCH (valid when Object Type is Rule) • NOLAUNCH (valid when Object Type is Rule) • NONE: Default
Flag	Member function to be used while applying the access. Default is MEMBER. Valid values: <ul style="list-style-type: none"> • MEMBER: Default • CHILDREN • @CHILDREN • @DESCENDANTS • @IDESCENDANTS
Object Type	Artifact object type. Default is SL_DIMENSION (Dimension/Member). Valid values: <ul style="list-style-type: none"> • SL_FORM - Form • SL_COMPOSITE - Composite Form, Infolet, or Dashboard • SL_TASKLIST - Tasklist • SL_CALCRULE - Rule • SL_FORMFOLDER - Form Folder • SL_CALCFOLDER - Rule Folder • SL_DIMENSION - Dimension/Member: Default • SL_CALCTEMPLATE - Template • SL_REPORT - Management Report • SL_REPORTSSHOT - Management Report Snapshot

Advanced Settings Definition

In the application template workbook, include a worksheet for advanced settings, using the advanced settings worksheet provided in the template for the Sample application as your guideline.

Advanced settings are:

- Evaluation order
- Performance settings
- Dimension properties such as hierarchy type, two-pass calculations, and data storage options
- Density (for aggregate storage applications only)
- Dimension assignments to cubes

Follow this workflow for setting up an advanced settings worksheet in your application template workbook:

1. [Define the Worksheet Name](#)

2. Define the Worksheet Name
3. Define Evaluation Order
4. Define Performance Settings
5. Define Dimension Settings
6. Define Density Settings
7. Assign Dimensions to Cubes

Define the Worksheet Name

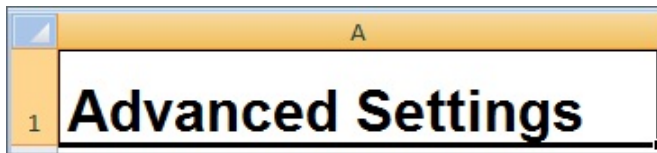
Name the advanced settings definition worksheet, `Advanced Settings`. For example:



Define the Worksheet Type

In cell A1 in the data worksheet, type `Advanced Settings` to signify that this sheet contains the advanced, or miscellaneous settings for the application. In [Figure 1](#), cell A1 contains the worksheet type, **Advanced Settings**, to indicate that the worksheet will contain advanced settings for the application.

Figure E-9 Worksheet Type Shown in Advanced Settings Worksheet of Application Template



Define Evaluation Order

In the Advanced Settings worksheet, define the evaluation order of dimensions in the "Evaluation Order" section. Dimensions are listed in the first column under the heading "Dimensions". Cubes are listed in subsequent columns. The dimensions in each cube can have a different evaluation order.

	Evaluation Order		Cubes	
	Dimensions	Plan1	PBCS	
3				
4				
5	Account	3		
6	Period			
7	Entity	1		
8	Year			
9	Scenario	2		
10	Version	1		
11	HSP_View			

Define Performance Settings

For Planning applications only.

In the Advanced Settings worksheet, define dimension storage property of each dimension for each cube in the "Performance Settings" section. Valid values are Dense or Sparse. Each cube requires at least one dense dimension. Dimensions are listed in the first column under the heading "Dimensions". Cubes are listed in subsequent columns. The sparse or dense value of each dimension can differ between cubes.

14	Performance Setting	Cubes				
15	Dimensions	Plan1	Plan2	Plan3	VisASO	Vis1ASO
16	Account	Dense	Dense	Dense	Dense	Dense
17	Period	Dense	Dense	Dense	Dense	Dense
18	Entity	Sparse	Sparse	Sparse	Sparse	Sparse
19	Year	Sparse	Sparse	Sparse	Sparse	Sparse
20	Scenario	Sparse	Sparse	Sparse	Sparse	Sparse
21	Version	Sparse	Sparse	Sparse	Sparse	Sparse
22	HSP_View	Sparse	Sparse	Sparse	Sparse	Sparse

Define Dimension Settings

In the Advanced Settings worksheet, define dimensions properties in the "Dimension Settings" section. Dimensions are listed in the first column under the heading "Dimensions". Dimension properties are listed in subsequent columns. See [Table 1](#) for the list of dimension properties

Table E-5 Dimension Properties Used in Dimension Settings Section of the Advanced Settings Worksheet

Dimension Property	Description or Valid Values
Description	Optional descriptive text
Alias Table	Optional alias table
Hierarchy Type	<ul style="list-style-type: none"> Dynamic Store
Two Pass Calculation	Yes No
Apply Security	Yes No
Data Storage	<ul style="list-style-type: none"> Store Dynamic Calc and Store Dynamic Calc Never Share Label Only Shared
Display Option	<p>Set application default display options for the Member Selection dialog box. Select Member Name or Alias to display members or aliases. Member Name:Alias displays members on the left and aliases on the right. Alias:Member Name displays aliases on the left and members on the right.</p> <ul style="list-style-type: none"> Member Name Alias Member Name:Alias Alias:Member Name

You can also use [Figure 2](#) for reference in adding information to the Dimension Settings section.

Figure E-10 Dimension Settings Section of the Advanced Settings Worksheet

25	Dimension Settings							
26	Properties	Description	Alias Table	Hierarchy Type	Two Pass Calculation	Apply Security	Data Storage	Display Option
27	Account							
28	Entity				Yes		Never Share	
29	Period			Dynamic				
30	Year							
31	Scenario							
32	Version							

Define Density Settings

For Planning Modules applications only.

In the Advanced Settings worksheet, define the dimension storage property of each dimension for each cube in the "Density" section. Each cube requires at least one dense dimension. Dimensions are listed in the first column under the heading "Dimensions". Cubes are listed in subsequent columns. The sparse or dense value of each dimension can differ between cubes.

25	Density	Cubes	
26	Dimensions	Plan1	EPBCS
27	Account	Dense	Dense
28	Currency	Sparse	Sparse
29	Entity	Sparse	Sparse
30	HSP_View	Sparse	Sparse
31	Period	Dense	Dense
32	Scenario	Sparse	Sparse
33	Version	Sparse	Sparse
34	Years	Sparse	Sparse

Assign Dimensions to Cubes

In the Advanced Settings worksheet, assign dimensions to cubes in the "Dimension Valid for" section. Dimensions are listed in the first column under the heading "Dimensions". Cubes are listed in subsequent columns.

For each dimension and cube intersection:

- Type **Yes** to include the dimension in the cube.
- Type **No** or leave the cell blank to exclude the dimension from the cube.

35	Dimension Valid For	Cubes				
36	Dimensions	Plan1	Plan2	Plan3	VisASO	Vis1ASO
37	Account	Yes	Yes	Yes	Yes	Yes
38	Entity	Yes	Yes	Yes	Yes	Yes
39	Period	Yes	Yes	Yes	Yes	
40	Year	Yes	Yes	Yes	Yes	
41	Scenario	Yes	Yes	Yes		
42	Version	Yes	Yes	Yes		

Updating an Application in Smart View

From Oracle Smart View for Office and Oracle Smart View for Office (Mac and Browser), Service Administrators can update Planning, Planning Modules, or FreeForm applications based on either the downloaded template or a modified copy of one of the templates. The modified template must always adhere to template guidelines (described in [Working with Artifacts in the Application Template](#)).



When you update an application, you can:

- Define new or modify existing dimensions
- Add or modify a limited amount of data
- Define new or modify existing access permissions
- Define new or modify existing substitution variables
- Modify advanced application setting

Only Service Administrators can update an application.

Before you begin, you should launch Excel and, from Smart View, log in to the applicable data source.

To update an application in Smart View:



1. If you have not already done so, open the modified application template file.
2. In the Smart View Panel (Windows) or Smart View Home panel (Mac and Browser), perform a task:
 - Oracle Smart View for Office: Select the application name and, in the Action Panel, select **Application Management**.
The application name is displayed in the tree in the Smart View Panel.
 - Oracle Smart View for Office (Mac and Browser): In the Smart View Home panel, click the Actions button, , and select the **Application Management** command in the drop-down list.
You can click the Actions button, , from any folder in the library tree.
3. In the popup dialog, select **Update Application**.
The application update status appears in the lower left corner of Excel.
4. When the application update process is complete, access the application, either in the web application or in Smart View, and verify your changes.

Deleting an Application

Service Administrators may delete applications from Oracle Smart View for Office and Oracle Smart View for Office (Mac and Browser).

Before you begin, you should launch Excel and, from Smart View, log in to the applicable data source.

To delete an application from Smart View:

1. In the Smart View Panel (Windows) or Smart View Home panel (Mac and Browser), perform a task:
 - Oracle Smart View for Office: Select the application name and, in the Action Panel, select **Application Management**.
The application name is displayed in the tree in the Smart View Panel.
 - Oracle Smart View for Office (Mac and Browser): In the Smart View Home panel, click the Actions button, , and select the **Application Management** command in the drop-down list.
You can click the Actions button, , from any folder in the library tree.
2. In the popup dialog, select **Delete Application**, and confirm in the subsequent dialog.
3. In the Smart View Panel (Windows) or Smart View Home panel (Mac and Browser), verify that the application is removed.

Planning Admin Extension and Office AutoCorrect

Note:

The information in this topic applies to the Planning Admin Extension on the Windows-based version of Oracle Smart View for Office; this information does not apply to the Planning Admin Extension in Oracle Smart View for Office (Mac and Browser).

In the Planning Admin Extension on Windows-based versions of Excel, Office AutoCorrect can affect member editing in Smart View.

When editing member properties, such as member names, member descriptions, aliases, or member formulas of the data type Text, you may have names that begin with two initial capital letters; for example

DGreen

Excel will autocorrect this name to one initial capital; for example:

Dgreen

In Excel, you can set an AutoCorrect option to retain two initial capital letters in a name.

To retain two initial capital letters in a name:

1. In Excel, access the **Excel Options** dialog.

2. Select **Proofing**, and then click the **AutoCorrect Options** button.
3. In the **AutoCorrect** dialog, clear the **Correct Two Initial Capitals** check box.
4. Click **OK** to close the **AutoCorrect** dialog, and then click **OK** to close the **Excel Options** dialog.

The change takes effect immediately. There is no need to restart Excel.

F

Using Smart View to Import and Edit Application Metadata

Understand how to work with application metadata, install the Admin Extension, and use Smart View grids. Also learn about dimensions, members, application members, and shared members in Smart View as well as how to refresh databases.

Related Topics

- [About Using Smart View to Work with Application Metadata](#)
- [Installing Smart View and the Admin Extension for Editing Dimensions](#)
- [Using Smart View Grids to Import and Edit Application Metadata](#)
- [Importing Dimensions in Smart View](#)
- [Editing Members in Smart View](#)
- [Adding Application Members in Smart View](#)
- [Moving Members in Smart View](#)
- [Working with Attribute Dimensions](#)
- [Designating Shared Members in Smart View](#)
- [Refreshing Databases](#)
- [Planning Admin Extension and Office AutoCorrect](#)

About Using Smart View to Work with Application Metadata

Applies to: Enterprise Profitability and Cost Management, Financial Consolidation and Close, FreeForm, Planning, Tax Reporting

Service Administrators can use the Planning Admin Extension with Oracle Smart View for Office and Oracle Smart View for Office (Mac and Browser) to quickly import and edit dimension and member metadata.

 **Note:**

- You must have Service Administrator privileges to import and edit dimensions in Smart View and Smart View (Mac and Browser).
- All procedures described in this appendix are performed within Smart View using the Planning Admin Extension.
 - To use the Windows client-based version of Smart View, see *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators* for instructions on installing the extension.
 - To use the Mac- or browser-based version of Smart View, see the *Deploying and Administering Oracle Smart View for Office (Mac and Browser)* for instructions on deploying the extension.

Installing Smart View and the Admin Extension for Editing Dimensions

Before you begin editing dimensions in Oracle Smart View for Office, ensure the following depending on whether you plan to use Windows-based Smart View, Oracle Smart View for Office (Mac and Browser), or both:

- **Windows-based Smart View** Install Smart View and the Planning Admin Extension.
See [Installing Oracle Smart View for Office and the Planning Admin Extension](#)
- **Smart View (Mac and Browser):** Deploy Smart View (Mac and Browser) with the Dimension Editor options enabled.
See [Deploying Oracle Smart View for Office \(Mac and Browser\) with the Admin Extension](#)

Installing Oracle Smart View for Office and the Planning Admin Extension

To use the Windows client-based version of Smart View, see *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*, Downloading and Installing Clients for instructions on installing Smart View.

Then install the Admin Extension.

 **Note:**

Prior to 22.07, the Admin Extension file was in MSI format. Starting in 22.07, the Admin Extension file is in SVEXT format.

If you installed the Admin Extension prior to 22.07, then you must first uninstall the MSI version of the extension from the Windows Control Panel, Programs and Features. If you keep the MSI version on your machine and also install the SVEXT version, then the Smart View extension update process will not recognize updates to the SVEXT version of the Admin Extension. You may continue to use the MSI version of the Admin Extension that you previously installed. However, the MSI version of the extension will not be updated in the future so will not contain any future bug fixes or enhancements. For this reason, Oracle recommends moving to the Admin Extension in SVEXT format.

 **Tip:**

- Before proceeding with installing the Admin Extension, Oracle recommends that you first clear your browser cache.
- Enterprise Profitability and Cost Management: The Admin Extension is supported starting with Smart View 22.100.

To install the Admin Extension:

- Download the extension from the Downloads page of your business process. See *Getting Started with Oracle Enterprise Performance Management Cloud for Administrators*, Downloading and Installing Clients for instructions on installing the Planning Admin Extension.
- Download and install using the extension installation and update process in Smart View. See Installing Extensions in *Working with Oracle Smart View for Office*.

Either method will download and install the Admin Extension in SVEXT format.

Deploying Oracle Smart View for Office (Mac and Browser) with the Admin Extension

To use the Mac- or browser-based version of Smart View, you must deploy a Smart View manifest file with the Admin Extension options enabled.

See the following topics in the *Deploying and Administering Oracle Smart View for Office (Mac and Browser)* for instructions on deploying Smart View with the Admin Extension features.

- Creating and Saving the Manifest File
- Enabling the Admin Extension
- Sideloaded and Logging In or Deploying the Manifest File to Office 365 Users

Using Smart View Grids to Import and Edit Application Metadata

The Smart View grid allows you to rapidly add, edit, and move the members of a dimension.

- [About the Smart View Grid](#)

- [The Smart View Grid and Ribbon Display](#)
- [Guidelines for Using the Smart View Grid](#)
- [Default Metadata Dimension Member Properties](#)

About the Smart View Grid

In Oracle Smart View for Office and in Oracle Smart View for Office (Mac and Browser), the grid consists of two dimensions:

- An Oracle Enterprise Performance Management Cloud dimension on one axis (Planning, Financial Consolidation and Close, Tax Reporting)
- A metadata dimension on another axis

A metadata dimension represents a flat list of metadata members. For each dimension, a predefined set of metadata members is presented by default. Each metadata member corresponds to a specific member property valid for the dimension that was imported onto the grid. Instead of containing numeric values, the metadata grid data cells hold the specific property values. To add metadata dimension member properties that are not on the grid by default, use the **Member Selection** dialog in Smart View.

The Smart View Grid and Ribbon Display

The Smart View grid displays the dimension with member names in rows and member properties in columns. When you first import a dimension for editing, a predefined set of member properties is displayed by default in the grid.

Dimension Grid in Smart View

In [Figure 1](#), you can see an example of the default member properties for the Vision Account dimension in Oracle Smart View for Office.

Figure F-1 Dimension Imported into Smart View for Office Grid with the Planning Ad Hoc Ribbon Displayed

	Parent Member	Default Data Storage	Data Type	Plan1 Consol op.	Plan2 Consol op.	Plan3 Consol op.	VisASO Consol op.	Vis1ASO Consol op.	Account Type	Variance Reporting	Time Balance
Account		Never Share	Currency	Ignore	Ignore	Ignore	Ignore	Ignore			

Note that in [Figure 1](#), the Planning Ad Hoc ribbon is displayed. Depending on the data source to which you are connected, the provider ad hoc ribbon for that data source is displayed. For example, if you are connected to an Enterprise Profitability and Cost Management data source, then the EPCM Ad Hoc ribbon is displayed.

The ad hoc ribbon that is displayed is the same as the provider ad hoc ribbon displayed for a conventional Smart View ad hoc grid, only with fewer options enabled.

For all dimensions, including attribute dimensions, these are the valid options in the provider ad hoc ribbon:

- Zoom In
- Zoom Out
- Keep Only
- Remove Only
- Member Selection
- Refresh
- Submit Data

The following options may appear enabled, but are not valid for metadata grids: Preserve Format, Cascade, Insert Attributes, POV, and Adjust.

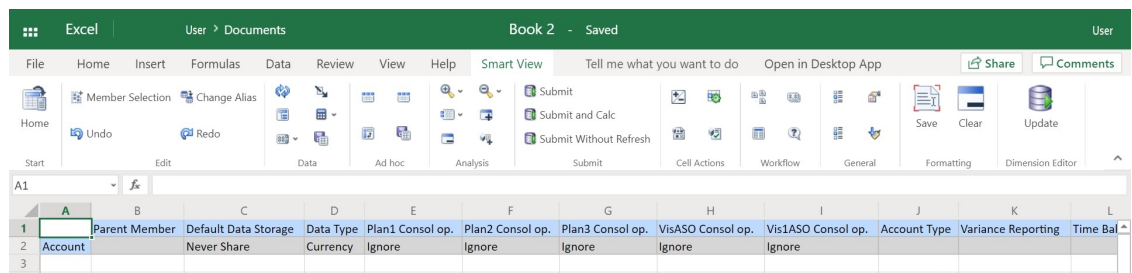
You can add metadata dimension member properties using the **Member Selection** dialog box, accessed from the ribbon, or accessed by right-clicking a property in the grid, then selecting **Smart View**, and then **Member Selection**.

For information on using the **Member Selection** dialog box in Smart View, see *Selecting Members from the Member Selector in Working with Oracle Smart View for Office 22.100*.

Dimension Grid in Smart View (Mac and Browser)

In [Figure 2](#), you can see an example of the default member properties for the Vision Account dimension in Oracle Smart View for Office (Mac and Browser), running in the Chrome browser.

Figure F-2 Dimension Imported into Smart View (Mac and Browser) Grid with the Smart View Ribbon Displayed



Note that in [Figure 2](#), the Smart View ribbon is displayed. This is the default ribbon name for an Oracle Smart View for Office (Mac and Browser) deployment. You may specify a different name for the ribbon. When importing a dimension on to a grid, all ribbon options appear enabled, but only a subset are applicable to a dimension grid.

For all dimensions, including attribute dimensions, these are the valid options in the ribbon:

- Zoom In
- Zoom Out
- Keep Only
- Remove Only
- Member Selection
- Refresh
- Update

You can add metadata dimension member properties using the **Member Selection** dialog box, accessed from the ribbon.

For information on using the **Member Selection** dialog box in Oracle Smart View for Office (Mac and Browser) to add metadata member properties to the grid, see *Selecting Members from the Member Selector* in *Working with Oracle Smart View for Office (Mac and Browser)*.

Guidelines for Using the Smart View Grid

The following guidelines will assist you in using the Smart View grid to edit dimension metadata:

- Use the Planning Admin Extension to add dimension members, and to edit and update dimension and member properties.
- The Planning Admin Extension cannot be used to:
 - Delete or remove dimensions (that is, the dimension root member) or members.
 - Edit dimension or member names.
- Data cell values can be textual or enumeration or numerical.
- The Parent Member is used to specify or modify the parent/child relationship.
- The position of a member in a grid doesn't necessarily represent the actual position of siblings in the outline.
- Each metadata grid must be linked to a corresponding dimension.
- Columns for each dimension are based on the corresponding set of member properties available in the dimension editor.

When you first import a dimension, a predefined set of metadata dimension member properties is displayed. See [Default Metadata Dimension Member Properties](#) for a list of those member properties.

- After a metadata grid is opened, it can't be relinked to a different dimension.
- The corresponding valid set of metadata members is specific to each dimension.
- Dimension members are valid for corresponding dimensions only.
- Plan type-specific properties will only display in the grid for Plan types that a dimension is enabled for. This includes properties such as consolidation operator, member formula, data storage, and others. When a dimension is enabled for Plan types, that means that the **Valid for Cubes** setting for a dimension has one or more Plan types selected. If a dimension contains Plan type-specific properties, but a Plan type is not selected, then the data cell for the related Plan type-specific properties will read, "Not used for Cube."
- For the Time Period dimension, Data Storage is the only editable property.
- The following functionality isn't available in Smart View grids with dimension metadata:
 - Pivot
 - Pivot to POV
 - Cell Text
 - Cell Notes
 - Supporting Details

Default Metadata Dimension Member Properties

When you first import a dimension in the Planning Admin Extension, a predefined set of dimension metadata member properties is displayed by default. Use the Member Selection dialog box to add other metadata member properties to the grid.

The sections below list the default member properties for the Planning dimensions.

For information on using the Member Selection dialog box in Oracle Smart View for Office to add other member properties to the grid, see "Selecting Members from the Member Selector" in *Oracle Smart View for Office User's Guide*.

Account Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Account Type
- Variance Reporting
- Time Balance
- Default Alias Table
- Default Formula

Entity Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Base Currency
- Default Alias Table

Custom Dimensions

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Default Alias Table

Scenario Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes

- Start Yr.
- End Yr.
- Start Period
- End Period
- Default Alias Table
- Default Formula

Version Dimension

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Type
- Default Alias Table
- Default Formula

Period and Years Dimensions

- Leave as is or limit to Parent Member
- Default Data Storage – Note that for the Time Period dimension, Data Storage is the only editable property
- Data Type
- Default Alias Table

Currency Dimension

- Parent Member
- Default Data Storage
- Data Type
- Symbol
- Predefined Symbol
- Scale
- Precision
- Triangulation Currency
- Reporting Currency
- Thousands Separator
- Decimal Separator
- Negative Sign
- Negative Color
- Default Alias Table
- Default Formula

HSP_View Dimensions (Sandbox dimensions)

- Parent Member
- Default Data Storage
- Data Type
- Consol op. for all Cubes
- Default Alias Table

Importing Dimensions in Smart View

Importing dimensions into the Smart View grid refers to placing the dimension and its members, and their respective properties, on the grid in preparation for editing.

By importing a dimension into Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), you can rapidly add, edit, and move the members of the dimension.



Note:

You must have Service Administrator privileges to import dimensions in Smart View.

See:

- [Importing Dimensions in Smart View for Office](#)
- [Importing Dimensions in Smart View \(Mac and Browser\)](#)

Importing Dimensions in Smart View for Office



Note:

You must have Service Administrator privileges to import dimensions in Oracle Smart View for Office.

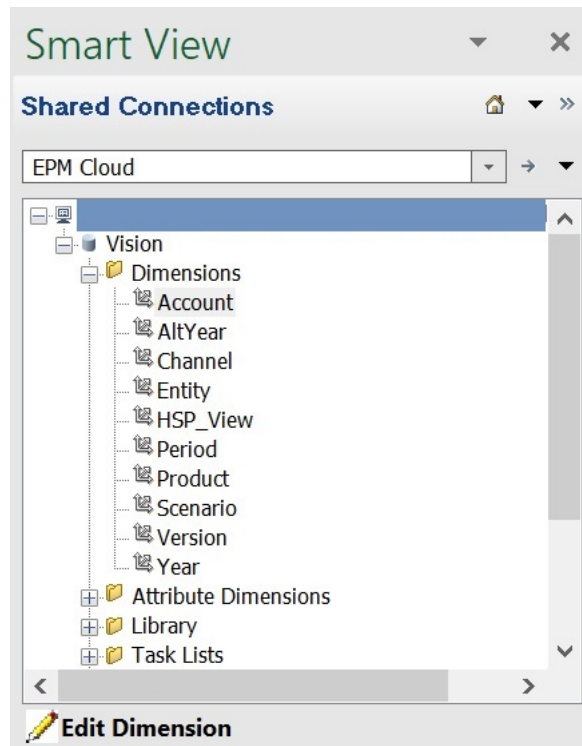
To import a dimension into a Smart View grid:

1. From the Smart View ribbon, click Panel.
2. In the Smart View Panel, click Shared Connections or Private Connections, and provide your user name, and password in the login windows.
If you chose Private Connections, select the private connection in the drop-down list of connections, then provide your login credentials.
3. From the drop-down list in the Smart View Panel, select your business process (for example, **Planning**) or **EPM Cloud**.
4. In the tree in the Smart View Panel, expand the **Dimensions** folder to view the application dimensions in the folder.

If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.

If a Time Period dimension is defined, it's displayed in the Dimensions folder. Note that for the Time Period dimension, Data Storage is the only editable property.

In the following example, the Dimensions folder is expanded and contains 10 dimensions.



5. Right-click a dimension name and select **Edit Dimension**.

Alternatively, select a dimension and then, in the Action Panel, select **Edit Dimension**.

See [Dimension Grid in Smart View](#) for an illustration of the initial grid for the Account dimension.

Importing Dimensions in Smart View (Mac and Browser)

Before you begin to work with dimensions in Oracle Smart View for Office (Mac and Browser), you should either sideload or deploy Smart View in your environment. Instructions are in *Deploying and Administering Oracle Smart View for Office (Mac and Browser)*:

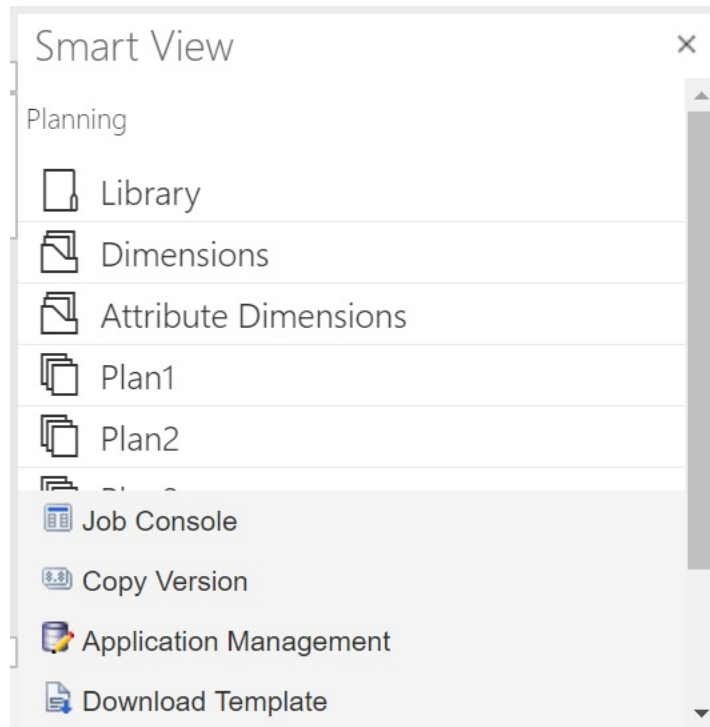
- Sideload and Logging In
- Deploying the Manifest File to Office 365 Users

To import a dimension into an Oracle Smart View for Office (Mac and Browser) grid:

1. From the Smart View ribbon, click **Home**.

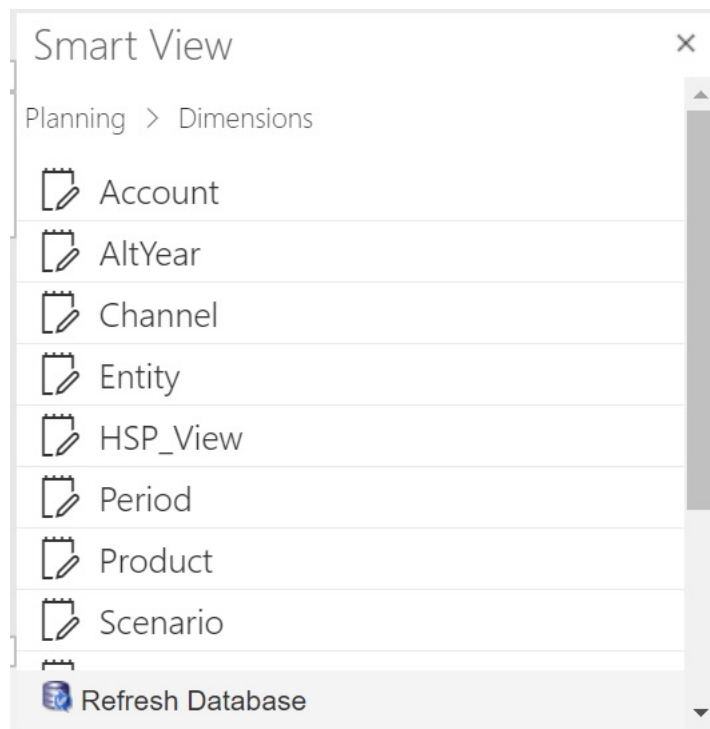
In the **Home** panel, dimensions are displayed in the **Dimensions** folder. If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.

If a Time Period dimension is defined, it's displayed in the Dimensions folder. Note that for the Time Period dimension, Data Storage is the only editable property.



2. In the **Smart View Home** panel, click the **Dimensions** folder to expand it and view the application dimensions in the folder.

In the following example, the Dimensions folder is expanded and shows eight of the 10 dimensions in the Vision application.



3. Click a dimension name to import the dimension on to the grid.

See [Dimension Grid in Smart View \(Mac and Browser\)](#) for an illustration of the initial grid for the Account dimension.

4. **Optional:** Click the provider link in the path at the top of the panel to return to the main page of the Home panel

For example, in the figure in [step 2](#), you would click **Planning** to return to the main page of the Home panel.

Editing Members in Smart View

The Smart View grid allows you to rapidly edit the properties of members of a dimension.

To edit member properties in Smart View:

1. Within Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View](#)).
2. Highlight a member property in the grid.
Note that for the Time Period dimension, Data Storage is the only editable property.
3. In the drop-down menu, select a value.

 **Note:**

Modified cells are displayed in a different color.

4. To save the grid, perform a task:
 - Oracle Smart View for Office: In the Planning Ad Hoc ribbon, click **Submit Data**.
 - In Oracle Smart View for Office (Mac and Browser), in the Smart View ribbon, click **Update**.

 **Note:**




You can save changes to multiple members and properties in the same **Submit Data** or **Update** operation. If the operation fails for one member, the application server will stop the operation and not save any changes.

Adding Application Members in Smart View

The Smart View grid allows you to rapidly add members to a dimension.

- [Adding Members in Smart View](#)
- [Guidelines for Adding Members in Smart View](#)

Videos

Your Goal	Watch This Video
Learn about adding Entity dimension members in Oracle Smart View for Office.	 Managing Entity dimension members in Oracle® Smart View for Office
Learn about adding Account dimension members in Smart View.	 Managing Account dimension members in Oracle® Smart View for Office
Learn about adding Scenario dimension members in Smart View.	 Managing Scenario dimension members in Oracle® Smart View for Office

Adding Members in Smart View

The Smart View grid allows you to rapidly add members to a dimension.

To add members in Smart View:

1. Within Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View](#)).

Note that Oracle Smart View for Office does not support adding members to the Time Period dimension.

2. Enter the name of a new member in the name column.

Note:

To add a member with a numeric name, place a single quote (') in front of the numeric member name to inform the system that the number is a member name and not data. For example, to add a member named 123, enter '123.

3. From the ribbon, click **Refresh**.

New members are marked by an asterisk (*) in the grid after you perform the Refresh. A default set of properties is automatically applied to the new member. The default Parent Member is the root member of the dimension.

4. **Optional:** To change any property from the default value (the root member), highlight the appropriate cell in the grid, and then from the drop-down menu, select another value. (See [Editing Members in Smart View](#).)

Note:

Perform a Refresh *before* you modify any properties in your new member. The Refresh operation will replace any changed values with default values from the server.

5. To save the grid, perform a task:
 - Oracle Smart View for Office: In the Planning Ad Hoc ribbon, click **Submit Data**.
 - In Oracle Smart View for Office (Mac and Browser), in the Smart View ribbon, click **Update**.

 **Note:**

- To modify the properties of the new member, see [Editing Members in Smart View](#).
- In Oracle Smart View for Office, member properties, including member names, can be localized based on the particular Locale set by in the Smart View add-in.
- You can save changes to multiple members and properties in the same **Submit Data** or **Update** operation. If the operation fails for one member, the application server will stop the operation and not save any changes.

Guidelines for Adding Members in Smart View

- A new member is added as the last sibling under the specified parent.
- Parent-child relationships are determined by the Parent Name column property.
- The relative position of a new member in the grid is insignificant.
- The relative position of a new member in the grid will not be changed after performing the **Submit Data** or **Update** operation. To see the actual position of a new member in the outline reflected in the ad hoc grid, perform **Zoom Out**, then **Zoom In**.
- A full validity check of a new member name, including a check for invalid characters and a check for duplicate names, is performed during the **Submit Data** or **Update** operation.
- Default properties are automatically applied by the application to a new member. The specific default properties are based upon those of the dimension.
- When adding new currency members to a Currency dimension in a simplified application, the parent member for the new currency defaults to the "Currency" dimension member. It should default to the "Input Currencies" member. You can correct this by doing the following:
 1. Replace "Currency" with "Input Currencies" in the Parent Member column for each new currency member that you added.
 2. Perform a **Submit Data** or **Update**.
 3. Click **Refresh**.
 4. Verify that for each new currency you added, the entry for the Parent Member column is "Input Currencies."

Moving Members in Smart View

The Smart View grid allows you to rapidly move members from one parent to another within a dimension.

To move a member in Oracle Smart View for Office:

1. Within Smart View or Oracle Smart View for Office (Mac and Browser), import a dimension into a Smart View grid (see [Importing Dimensions in Smart View for Office](#).)
2. Highlight the member in the **Parent Member** column in the grid.

 **Note:**

An empty Parent Member property causes the value of the Parent Member to default to the root member.

3. Enter a parent name at the intersection of the **member name** and **Parent** column.
4. Click **Submit Data** to save the grid.

 **Note:**

You can save moves of multiple members or subtrees in the same **Submit Data** operation. If the **Submit Data** operation fails for one member, the application server stops the operation and doesn't save changes.

Guidelines for Moving Members in Smart View

- An empty Parent Member in the grid denotes a root member in the dimension.
- The value of a Parent Member follows the rules applicable to the corresponding value in the metadata load file used by Smart View.

Working with Attribute Dimensions

Related Topics

- [Adding Attribute Dimension Members in Smart View](#)
- [Associating Attribute Dimension Members with Dimension Members](#)

Adding Attribute Dimension Members in Smart View

You create attribute dimensions in the web interface. You can then add members to attribute dimensions using the Admin Extension in Oracle Smart View for Office or Oracle Smart View for Office (Mac and Browser).

- [Adding Attribute Dimension Members in Smart View for Office](#)
- [Adding Attribute Dimension Members in Smart View \(Mac and Browser\)](#)

Adding Attribute Dimension Members in Smart View for Office

You create attribute dimensions in the web interface. You can then add members to attribute dimensions using the Admin Extension in Oracle Smart View for Office.

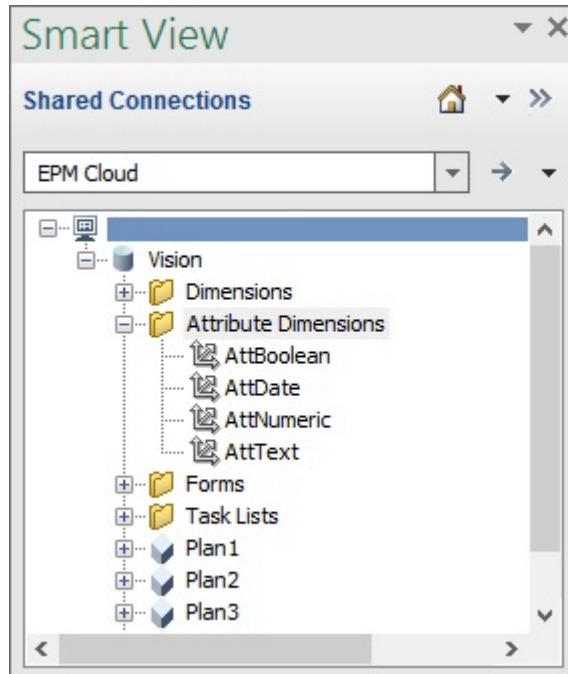
To add members to attribute dimension members:

1. From the Smart View ribbon, click Panel.
2. In the Smart View Panel, click Shared Connections or Private Connections, and provide your user name, and password in the login windows.

If you chose Private Connections, select the private connection in the drop-down list of connections, then provide your login credentials.

3. From the Smart View Panel, select EPM Cloud.
4. In the tree in the Smart View Panel, expand the Attribute Dimensions node.

In the following example, the Attribute Dimensions node contains four attribute dimensions, one for each attribute type: text, date, Boolean, and numeric.



5. Select an attribute dimension, and then select **Edit Dimension**.

To illustrate, we selected the AttText attribute dimension to edit. An example of the initial grid for the attribute dimension is shown. This dimension has no members yet, and just two properties, Parent member and Default Alias Table.

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		

6. Type the attribute member names to add; for example:

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		
3	Gold		
4	Silver		
5	Platinum		

7. From the Smart View ribbon, click **Submit**.

The attribute members are submitted to the application.

	A	B	C
1		Parent Member	Default Alias Table
2	AttText		
3	Gold	AttText	
4	Silver	AttText	
5	Platinum	AttText	

8. **Optional:** Continue editing the attribute members, entering data for other properties by typing directly in the grid, and then submit your changes.

Adding Attribute Dimension Members in Smart View (Mac and Browser)

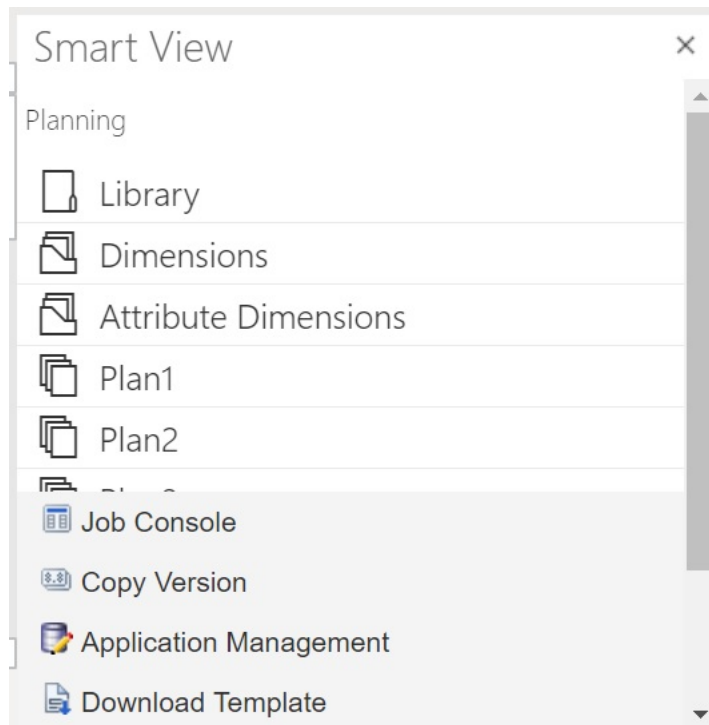
Before you begin adding attribute dimension members in Oracle Smart View for Office (Mac and Browser), you should either sideload or deploy Smart View in your environment. Instructions are in *Deploying and Administering Oracle Smart View for Office (Mac and Browser)*:

- Sideload and Logging In
- Deploying the Manifest File to Office 365 Users

To add a member to an attribute dimension in a Oracle Smart View for Office (Mac and Browser) grid:

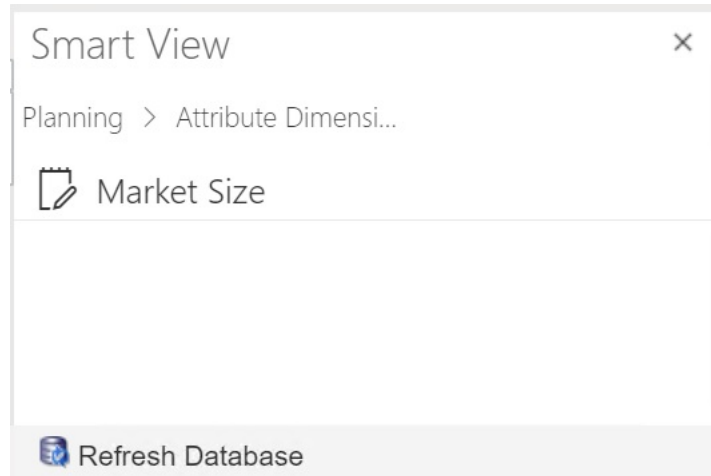
1. From the Smart View ribbon, click **Home**.

In the **Home** panel, dimensions are displayed in the **Dimensions** folder. If attribute dimensions are defined, they are displayed in the **Attribute Dimensions** folder.



- In the **Smart View Home** panel, click the **Attribute Dimensions** folder to expand it and view the attribute dimensions in the folder.

In the following example, the Attribute Dimensions folder is expanded and shows one attribute dimension, Market Size, in the Vision application.



- Select an attribute dimension to import it onto the grid.

To illustrate, we selected the Market Size attribute dimension to edit. An example of the initial grid for the attribute dimension is shown. This dimension has no members yet, and just two properties, Parent member and Default Alias Table.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		

- In the attribute name column, under the attribute name, type the attribute member names to add.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		
3	Large		
4	Medium		
5	Small		

- From the Smart View ribbon, click **Submit**.

The attribute members are submitted to the application.

	A	B	C
1		Parent Member	Default Alias Table
2	Market Size		
3	Large	Market Size	
4	Medium	Market Size	
5	Small	Market Size	

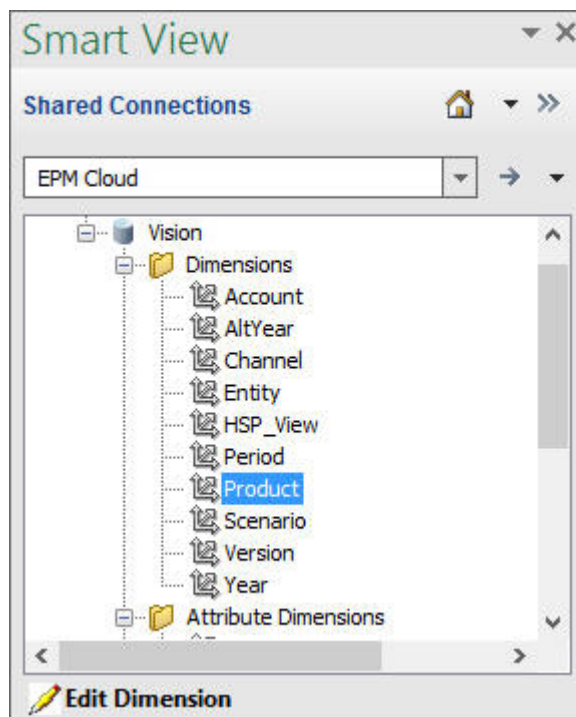
6. **Optional:** Continue editing the attribute members, entering data for other properties by typing directly in the grid, and then submit your changes.

Associating Attribute Dimension Members with Dimension Members

The illustrations in this topic are from Oracle Smart View for Office, but the concepts also apply to Oracle Smart View for Office (Mac and Browser).

1. In the tree in the Smart View Panel (Windows) or Smart View Home (Mac and Browser), expand the **Dimensions** node, and select the dimension to work with.

In the following example, the Dimensions node shows the standard dimensions in the Vision application along with some custom dimensions such as AltYear and Channel. The Product dimension is selected.



2. Select **Edit Dimension** and note the initial layout of the grid on the sheet.

In Oracle Smart View for Office (Mac and Browser), just click the dimension to import it onto the grid.

If the attribute dimensions are not displayed on the sheet, then use the Member Selector to add them. In the Planning Ad Hoc ribbon (Windows) or Smart View ribbon (Mac and Browser), select **Member Selection**, and then add the attribute dimensions.

3. In the grid, expand the dimension to view its members.
4. Associate the attribute member values to the dimension members using the cell-based member selector, as shown in [Figure 1](#).

Figure F-3 Associating Attribute Values to Dimension Members

	A	B	C	D	J	K	L	M	N
1		Parent Member	Default Data Storage	Data Type	Default Alias Table	AttText	AttDate	AttBoolean	AttNumeric
2	Product		Never Share	Unspecifie		<None>	<None>	<None>	<None>
3	P_TP	Product	Dynamic Calc	Unspecifie	Total Product	Platinum	<None>	<None>	<None>
4	P_000	P_TP	Store	Unspecifie	No Product	Gold	<None>	<None>	<None>
5	P_TP1	P_TP	Dynamic Calc	Unspecifie	Computer Equipment	Gold	<None>	<None>	<None>
6	P_100	P_TP1	Store	Unspecifie	Product X	Platinum	<None>	<None>	<None>
7	P_110	P_TP1	Store	Unspecifie	Sentinal Standard Notebook	<None>	<None>	<None>	<None>
8	P_120	P_TP1	Store	Unspecifie	Sentinal Custom Notebook		<None>	<None>	<None>
9	P_130	P_TP1	Store	Unspecifie	Envoy Standard Netbook		<None>	<None>	<None>
10	P_140	P_TP1	Store	Unspecifie	Envoy Custom Netbook		<None>	<None>	<None>
11	P_150	P_TP1	Store	Unspecifie	Other Computer		<None>	<None>	<None>
12	P_160	P_TP1	Store	Unspecifie	Tablet Computer		<None>	<None>	<None>
13	P_TP2	P_TP	Dynamic Calc	Unspecifie	Computer Accessories		<None>	<None>	<None>
14	P_200	P_TP2	Store	Unspecifie	Accessories		<None>	<None>	<None>
15	P_210	P_TP2	Store	Unspecifie	Keyboard	<None>	<None>	<None>	<None>

5. Repeat the previous step for any other dimension member and attribute value associations you want to define.
6. At any time, click **Submit Data** in the Planning Ad Hoc ribbon (Windows) or **Submit** in the Smart View ribbon (Mac and Browser) to submit your changes to the database.

You can perform interim submits, or submit all changes at once.

Designating Shared Members in Smart View

The Smart View grid allows you to rapidly designate members for sharing within a dimension.



Note:

In Smart View, the Shared data storage option isn't available for members of the Currency dimension or any attribute dimensions.

To designate a shared member in Oracle Smart View for Office:

1. Verify that the base member exists.
2. Highlight the base member in the **Parent Member** column in the grid.
3. Change the parent name value for the base member.
4. Highlight the base member in the **Data Storage** column.
5. In the drop-down menu, select **Shared**.
6. Click **Submit Data** (Windows) or **Submit** (Mac and Browser) to save the grid.

The submit operation will refresh the base member with its original Parent Member and Data Storage properties. The shared member will be added under the specified parent on the server. You must zoom in on the parent to see the newly added shared member.

**Note:**

The new shared member will *not* be automatically added to the Smart View grid. The list of members displayed in the grid remains unchanged.

Refreshing Databases

Related Topics

- [Refreshing Databases in Smart View for Office](#)
- [Refreshing Databases in Smart View \(Mac and Browser\)](#)

Refreshing Databases in Smart View for Office

The Oracle Smart View for Office grid allows you to quickly refresh a database.

To refresh a database in Smart View:

1. From the Smart View ribbon, click **Panel**.
2. From the Smart View Panel, select **Planning**.
3. Expand the **Dimensions** folder to view the application dimensions in the folder.
If attribute dimensions are defined, they are displayed in the **Attributes** folder.
4. Right-click the *root* **Dimension** or **Attributes** folder and select **Refresh Database**.

The Smart View **Refresh Database** dialog box is displayed.

**Tip:**

The database refresh cannot be completed while a rule type job is running or in progress. Check the Job Console, either in the web or in Oracle Smart View for Office (Mac and Browser), for any jobs running against the database. When all jobs are complete, then perform the database refresh.

5. Click **Refresh**.

A progress bar is displayed, indicating the percentage of steps completed for the refresh or create operation.


Refreshing Databases in Smart View (Mac and Browser)

The Smart View grid allows you to quickly refresh a database or create a new one.

To refresh a database in Oracle Smart View for Office (Mac and Browser):

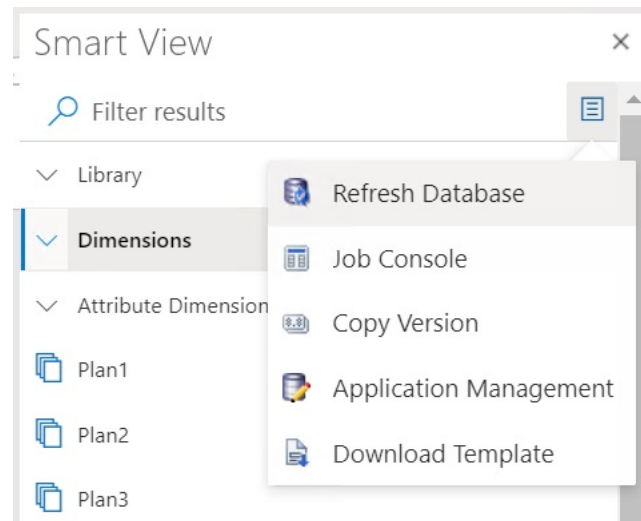
1. From the Smart View ribbon, click **Home**.
2. From the Smart View Home panel, navigate to the root application **Dimensions** folder.

If attributes are defined in the application, to refresh attribute dimensions, navigate to the **Attribute Dimensions** folder.

3. Select the *root* **Dimension** or **Attribute Dimensions** folder, click the **Actions** button, , and then select **Refresh Database** from the drop-down menu.

The **Refresh Database** dialog box is displayed.

In the following example, the **Dimensions** folder is selected, and in the **Actions** drop-down menu, **Refresh Database** is selected.



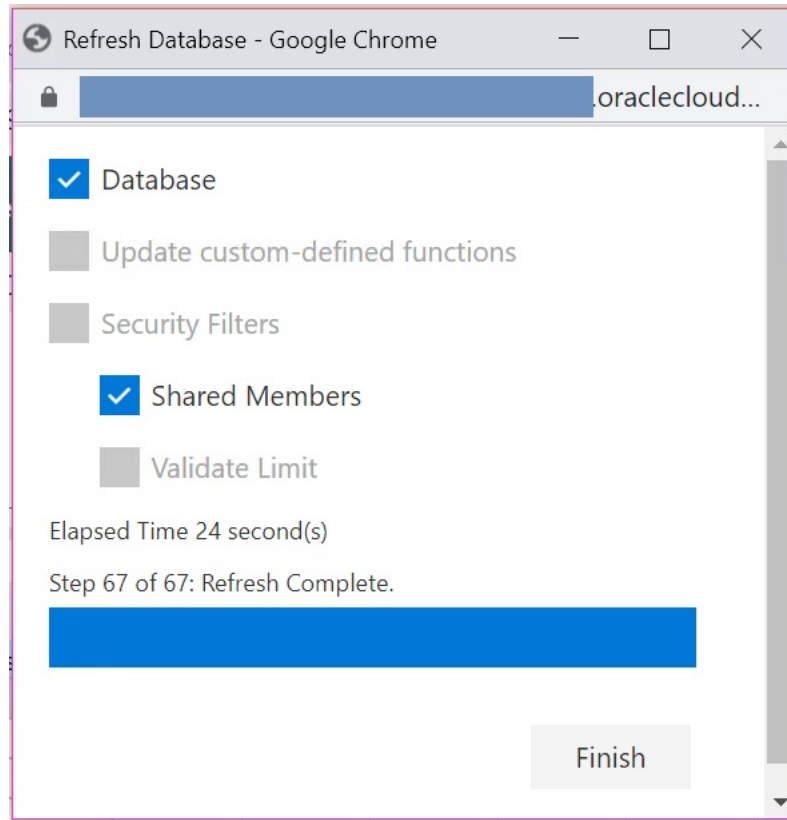
 **Tip:**

The database refresh cannot be completed while a rule type job is running or in progress. Check the Job Console, either in the web or in Oracle Smart View for Office (Mac and Browser), for any jobs running against the database. When all jobs are complete, then perform the database refresh.

4. Select the **Database** check box, and then click **Refresh**.

In the following illustration, the **Database** and **Shared Members** check boxes are selected. Other options that can be selected for refresh are:

- Update custom-defined functions
- Security filters
- Validate limits



A progress bar is displayed, indicating the percentage of steps completed for the refresh or create operation.

5. Click **Finish** to close the dialog.

Planning Admin Extension and Office AutoCorrect

Note:

The information in this topic applies to the Planning Admin Extension on the Windows-based version of Oracle Smart View for Office; this information does not apply to the Planning Admin Extension in Oracle Smart View for Office (Mac and Browser).

In the Planning Admin Extension on Windows-based versions of Excel, Office AutoCorrect can affect member editing in Smart View.

When editing member properties, such as member names, member descriptions, aliases, or member formulas of the data type Text, you may have names that begin with two initial capital letters; for example

DGreen

Excel will autocorrect this name to one initial capital; for example:

Dgreen

In Excel, you can set an AutoCorrect option to retain two initial capital letters in a name.

To retain two initial capital letters in a name:

1. In Excel, access the **Excel Options** dialog.
2. Select **Proofing**, and then click the **AutoCorrect Options** button.
3. In the **AutoCorrect** dialog, clear the **Correct Two Initial Capitals** check box.
4. Click **OK** to close the **AutoCorrect** dialog, and then click **OK** to close the **Excel Options** dialog.

The change takes effect immediately. There is no need to restart Excel.

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Planning Best Practices

Use these best practices for Planning.

This table provides links to the best practices mentioned in this guide.

Category	Best Practice For	See this Section
EPM Center of Excellence	Creating and running an EPM Center of Excellence	Creating and Running an EPM Center of Excellence
Planning Application Design	Designing your application	Best Practices for Designing Your Application
Application Launch	Resolving login issues	Resolving Login Issues in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Down Environments	Resolving issues with environments that are down	Dealing with Down Environments in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Dynamic Tabs	Using dynamic tabs	Using Dynamic Tabs in Redwood Experience in <i>Getting Started with Oracle Enterprise Performance Management Cloud for Administrators</i>
Application Interface	Using the Planning interface	Considerations When Using the Application Interface
FreeForm App Creation	Creating FreeForm apps	Important Considerations for FreeForm Apps
Cube Optimization	Improving cube performance	<ul style="list-style-type: none"> • Improving Cube Performance • Optimize BSO Cubes in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i> • Optimizing Aggregate Storage Option Cubes in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Data Export	Resolving issues if you get an Oracle Essbase query limit error when exporting a large number of data cells from ASO cubes	Handling Issues Related to Large Data Export from ASO Cubes in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Application Database Refresh	Resolving database refresh issues	Troubleshooting Database Refresh Issues in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Planning Application Conversion	Converting a Standard or Reporting Application to an Enterprise Application	Conversion Considerations

Category	Best Practice For	See this Section
Daily Maintenance	Deciding whether to perform a complete export during the daily maintenance process or to create an application backup	Exporting Smart List Textual Data During Daily Maintenance for Incremental Data Import in <i>Oracle Enterprise Performance Management Cloud Operations Guide</i>
Connecting Environments	Connecting EPM Cloud environments and migrating EPM Cloud connections	<ul style="list-style-type: none"> • Considerations • Considerations for Migrating EPM Cloud Connections
Navigation Flows	Designing navigation flows and handling issues with navigation flows in connected environments	<ul style="list-style-type: none"> • Navigation Flow Design Best Practices and Naming Considerations • Handling Issues with Navigation Flows in Oracle Enterprise Performance Management Cloud Operations Guide
Dashboards Containing Master Forms	Designing dashboards with master forms and target objects	Creating Dashboards Containing Master Forms and Details
Dashboards 2.0 POV Bar	Using POV bars in Dashboards 2.0	Dashboard 2.0 POV Bar Considerations
Dynamic Calc	Adding children under a dynamic calc parent	About Dynamic Calc
IPM Insights	Leveraging the benefits of IPM Insights and Auto Predict and designing the slice for Insights	<ul style="list-style-type: none"> • Considerations for IPM Insights • Considerations for Defining the Slice for Insights
Configuring IPM: Bring Your Own ML	Importing a fully trained Machine Learning (ML) model and deploying it to a Planning application	Considerations for Bring Your Own ML
Auto Predict	Using Auto Predict	Auto Predict Considerations
Aliases	Assigning aliases to dimension members	About Aliases
Dynamic Members	Removing dynamic members	Considerations
Period Dimensions	Creating an alternate hierarchy in the Period dimension	Considerations for Alternate Hierarchies in Period Dimensions
Form Design	Designing forms and resolving form functional and performance issues	<ul style="list-style-type: none"> • Form Design Considerations • Resolving Form Functional and Performance Issues in Oracle Enterprise Performance Management Cloud Operations Guide
Smart Push	Resolving issues with Smart Push	Resolving Issues with Smart Push in Oracle Enterprise Performance Management Cloud Operations Guide
Rules Design	Designing rules to avoid common execution errors and optimizing slow rules	Troubleshooting Business Rule Errors and Performance in Oracle Enterprise Performance Management Cloud Operations Guide





Category	Best Practice For	See this Section
Groovy Rules	Implementing and using Groovy rules and using Groovy rules to calculate data on forms	<ul style="list-style-type: none"> Groovy Business Rule Tutorial Videos Groovy Business Rule Tutorials Learning Groovy in Oracle EPM Cloud Calculating Modified Data Using Groovy Rules
Groovy Rules and Smart Push	Using Groovy rules and Smart Push to move modified data into a reporting cube	Moving Modified Data Using Groovy Rules and Smart Push
Task Manager	Switching to Task Manager	Considerations for Switching to Task Manager
Task Manager: Setting Schedule Status	Manage the schedule lifecycle by setting the schedule status in Task Manager	Setting Schedule Status
Approval Unit Promotional Path Data Validation Rules	Designing rules that affect the approval unit promotional path	Design Considerations for Approval Unit Promotional Path Data Validation Rules

Best Practices for Designing Your Application

Follow these basic steps to design an application based on best practices that meets your business needs.

- [1. Best Practices for Getting Started](#)
- [2. Best Practices for Planning Your Application](#)
- [3. Best Practices for Applying Your Design](#)

Videos

Your Goal	Watch This Video
Learn how to gather design documentation.	 Gathering Design Documentation in Oracle Planning and Budgeting Cloud
Learn how to design an application.	 Designing Planning Applications in Oracle Planning and Budgeting Cloud
Learn how to set up dimensions.	 Setting Up Dimensions in Oracle Planning and Budgeting Cloud
Learn how to design forms.	 Designing Forms in Cloud EPM Planning
Learn how to build effective and efficient calculations.	 Building Effective and Efficient Calculations in Oracle Planning and Budgeting Cloud
Learn how to monitor system activities.	 Monitoring System Activities in Oracle Planning and Budgeting Cloud

Best Practices for Getting Started

Before you create your application, gather information about current processes. This is a best practice to ensure that the application meets your business requirements.

- **Analyze your current processes.**
 - Look at what is working in your current processes, and plan how to build that in to the application. Consider taking this opportunity to improve current processes.
 - Review your company's financial statements. Determine the key revenue and expense areas that make up 80% of profit and loss.
 - Focus on the major drivers of your business. For this subset of accounts, understand the business drivers and required dimensions. For example, employee compensation typically accounts for 50-60% or more of expenses.
 - Decide if detailed modeling is required, or if another methodology exists. For each major account in the profit and loss statement, understand how to derive appropriate values for the account. Business logic could include simple calculations like Units x Rates or other methods.
 - For the remaining 20% of the accounts, plan or forecast using some simple logic such as a percentage growth or simple entry.
- **Gather any existing spreadsheets.** Based on your current process, gather your input sources and understand their purpose. Review the sources to determine the business logic, relationships, and other calculations.
 - Analyze the spreadsheets to understand your current processes. Understand the sources of information and the business logic that they support. Find out if your business process logic applies to all organizations.
 - Find out if your business process logic applies to other business units and divisions. If the process differs, decide if you want to make processes consistent.
- **Gather your current reporting requirements.** Because reports are used to present financial results for management review and analysis, they are a key consideration during design.
 - Understand the business logic, relationships, and calculations for your current processes.
 - Find out if your business process logic applies to other business units and divisions. If the process differs, decide if you want to make processes consistent.
- **Review your current financial statements.** Review reports and consider what type of information is included.
 - Identify the dimensions in reports, for example, if reports are done by cost center, division, account, or customer. Decide if you need to add dimensions, such as product.
 - Review financial statements and examine the intersections. Learn if reports are done by account and entity or by other slices.
 - Understand the business drivers for accounts, including the dimensions involved. Review profit and loss line by line to determine if modeling is involved or if the information is simply added by users.
 - Note the layout of reports, including which elements are on the rows and columns.
 - Determine the number of unique report formats such as by Cost Center or by Division. Specify a report format for each type of report you need.

- **Gather planning and forecast requirements.** Collect the requirements for producing an annual plan and forecast. Conduct an analysis and understand if all processes are the same.
 - **Determine currency requirements.** Identify the currencies in which you plan and report, and whether you plan or forecast in multiple currencies. Verify foreign currency requirements. Confirm if you perform any currency sensitivity analysis.
 - **Determine the planning horizon.** Know how many years in the future you plan, such as one, two, three, or five years into the future. Plan how much historical data to bring into the application. It's typical to include one or two years of historical data.
 - **Identify the planning and forecasting process.** Know whether you prepare annual budgets and forecasts. Understand how often you revisit your forecast, such as monthly or quarterly.

Determine the planning processes you want to support, such as Plan or Forecast. Establish if planning and forecasting processes are similar. Know whether you want to prepare a rolling forecast.

Decide if you'll plan toward a target. If you set high level targets for plan or forecast, decide on the level of accounts to target.

Determine if multiple iterations are required. Establish if you need to store multiple submissions of Plan or Forecast. Determine how many forecasts you maintain. Decide if you want to do comparisons, such as comparing forecasts.

Additional questions to help you plan the process:

- * What are the expense drivers for your business, such as compensation, material, travel, or capital and equipment expenses?
- * What are the revenue drivers for your business, such as products, projects, or services?
- * If Product is one of the main revenue drivers, how many products do you have?
- * How many business units or entities do you have? What main metrics and KPIs are tracked? How many users are involved in financial planning? Who are the main users?
- * Determine the approval process that should be incorporated into the application. Is the approval process the same for Plan and Forecast?
- **Understand your data sources.** Know the file format and the contents of each data source. This helps you plan requirements for dimension and data integrations.
 - * Determine the source of dimensions such as Account, Entity, and custom dimensions.
 - * Determine the source and frequency of Actual results.
- **Determine your approach going forward.** Identify process improvements, and note which ones to incorporate in your application. Plan the strengths to incorporate going forward, and identify any weakness and areas to improve in the future.

Best Practices for Planning Your Application

An important best practice is to establish the goals, key objectives, and scope of your application. Implementation is often broken into phases to keep objectives in focus. After you know the requirements, you can move forward with designing your application.

The information you gathered earlier can be included in your application as follows:

- Dimensions
- Forms
- Reports
- Calculations
- Users
- **Design dimensions.** Identify the dimensions required to support your process. Your application comes with these dimensions: Account, Entity, Version, Scenario, Years, Period, and Currency, where applicable.
 - Identify the members to be included in the application and the source of those dimensions. Understand the size of each dimension.
 - It's a best practice to document calculations. For each piece of the calculation, document how the result is determined and the source of the number. Confirm if the source is data entry or data fed from another system.
- **Design calculations.** Review your company's profit and loss statement line by line, and confirm how to plan or forecast the account. For accounts that require calculations, you can leverage Calculation Manager to build the logic.

Understand calculations, and ask any necessary questions. For base accounts, confirm how each account is planned. Sample questions:

- Does this calculation apply for all entities?
- Are there any other dimensional aspects to this calculation?
- Is the calculation by product or customer?
- Is the calculation the same for Plan and Forecast?
- **Determine revenue calculations.** It's a best practice to establish the requirements for revenue and its drivers.
 - Know the business drivers you use, and understand if revenue is driven by product or services. Decide if you want to derive revenue in your model. Identify any other information to capture.
 - Establish the revenue drivers. Determine if other dimensions are required.
 - Decide on the logic for revenue planning. Identify the calculations you want to build to support your process, for example, Units x Price. Plan the logic behind your revenue calculations.
 - Determine the forms and the layout to collect information and input from end users.
- **Determine expense requirements.** Review your expense accounts to identify the key areas of your business.

Focus on the areas that make up the majority of your expense to identify the major drivers. You can plan the remaining minor expenses in a very simple and straightforward way, such as by using trends or by simply entering a value.

- **Determine expense drivers.** Focus on this group of accounts, and determine the business drivers of the accounts and the required dimensions.

Review your expense accounts to identify the key areas of your business. Focus on the areas that make up the majority of your expense to identify the major drivers. You can plan the remaining minor expenses in a very simple and straightforward way, such as by using trends or by simply entering a value.

- Review employee compensation. Confirm how employee compensation will be planned, such as by employee, job, or grade.

- Know which accounts are included in planning, and understand the sources of data to support compensation. Identify the type of reporting you do on compensation.
- Assess other expense account requirements. Plan the calculations you need to build to support your process. Know the logic behind your expense calculations.
- Document calculations. For each piece of the calculation, document how the result is determined and the source of the number. Confirm if the source is data entry or data fed from another system.
- Determine the forms and the layout to collect information and inputs from the end users.

Determine the approval process. Determine the dimensions that drive the approval process for Plan and Forecast. The base dimension of approval process is Entity, Scenario, and Version. Decide if you want to include another dimension, such as Product, Project, or Market.

Document the approval process the application should support.

Best Practices for Applying Your Design

After reviewing the design guidelines and best practices in this section, you're on your way to designing a successful application that meets your business needs. You can now quickly and easily set up your application.

Use the information that you gathered to set up your application. The application setup wizard builds the foundation of your application based on your answers to simple questions.

As an example, here is how some of the information you gathered correlates to your application.

Table G-1 Applying Your Design to the Application

Research on Requirements	Application Wizard Setting
The number of historical years to include	The Start Year for the application
Your planning horizon	The number of years chosen for the application
The planning processes to support	The scenarios included in the application. You can either add scenarios in the application wizard, or you can add them later.
Whether you need to store multiple submissions of Plan or Forecast	The number of submissions correlates to versions in the application. You can add versions in the application wizard, or you can add them later.
Whether you plan in multiple currencies	If you plan in multiple currencies, answer Yes in the application wizard. You'll add currencies later. Select your reporting currency in the wizard.
Time periods	If you require weekly distribution such as 445, 454, or 544, select the base time period as 12 Months, and then select an appropriate Weekly Distribution option. Even monthly distribution is the default.

Best Practices for the Design Walkthrough

Use these best practices to do a design walkthrough that will help you build and roll out your application.

Build Your Application

Start by building the foundation—your company's accounts and organizational structure. Next, add scenarios to support your internal processes, such as Plan, Actual, and Forecast. Add the variance members you report, such as Actual vs. Plan.

Create forms that will be used to collect data from your users and to perform reviews, analysis, and reporting. To support your business logic, you can leverage Calculation Manager to build your calculations. You can also create reports and apply access permissions before rolling out your application to users.



Create the Application Structure

Add accounts, entities, and other dimensions to support your business process.

Dimensions categorize data values. Planning includes these dimensions: Account, Entity, Scenario, Version, Period, and Years. If you plan in multiple currencies, your application also has a Currency dimension.

You can use the Custom dimension to define your own values, such as Product, Customer, or Market. You can have up to 32 total dimensions. However, the best practice recommendation is to include fewer than 12. Dimensions can be added using a load file or built in Oracle Smart View for Office.

Videos

Your Goal	Watch This Video
Learn how to export and import data in the application.	 Exporting and Importing Data in Oracle Planning and Budgeting Cloud
Learn how to load dimensions using a file.	 Importing Metadata in Oracle Planning and Budgeting Cloud

About the Entity Dimension

The Entity dimension represents your organizational structure, such as Cost Centers, Departments, Business Units, Divisions, and so on.

You can group Cost Centers by creating rollup members, called parents, to reflect how your organization is viewed. For example, rollups can be by business unit, division, or other functional structure. As an example, you could create Cost Centers that roll up to Business Units that roll up to Divisions.

You can create multiple reporting structures. For example, an alternate structure could be created to support regional reporting. If you plan in multiple currencies, the base currency of each entity should be set.

The Entity dimension is one of the primary dimensions used for the budgeting process. Together with the Scenario and Version dimensions, the Entity dimension is used to define a planning unit, a discrete component that can be promoted or demoted for approval or review by a user's peers.

Members of all dimensions outside the planning unit will be promoted and demoted along with the planning unit itself. For example, all twelve months are promoted together when a planning unit is promoted. Individual months can't be promoted independently.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

After each dimension is loaded or updated, it's a best practice to refresh the application.

About the Account Dimension

The Account dimension is the place for your chart of accounts. It should include the members to which you plan or forecast. It doesn't necessarily include every account in your chart.

For example, your Account dimension could include accounts for Income Statement, Balance Sheet, and Cash Flow. Or, it could include accounts for KPIs and Ratios. In some cases, your accounts may have sub accounts, but this isn't typical.

The Account dimension includes financial intelligence. The following account types are supported:

- Expense: Cost of doing business
- Revenue: Source of income
- Asset: Company resources
- Liability and Equity: Residual interest or obligation to creditors
- Saved assumption: Centralized planning assumptions ensuring consistency across the application

The account type settings are used to report Quarterly and Year Total values and for variance analysis.

Planning uses a hierarchical structure to create Account grouping subtotals and totals. Each account group is assigned a consolidation operator that determines how it rolls up to its parent.

Example: Net Income = Total Revenues - Total Expenses

In this example, the consolidation operator for Total Revenues is Addition, and the consolidation operator for Total Expenses is Minus.

The Account dimension can be populated either by loading data or using Smart View. To load data from a file, the file format must meet specific requirements.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

After each dimension is loaded or updated, it's a best practice to refresh the application.

Best practices:

- Upper level members should be set to Dynamic Calc.
- For member formulas used to calculate Ratios and other types of KPIs or percentages, set them to Dynamic Calc, Two Pass. The Two Pass setting properly calculates Percentages at upper levels.

About the Version Dimension

You can use versions to preserve different iterations of the planning process. They are also useful for controlling data access to Read or Write.

These two types of versions are available:

- Standard Target: Input data can be entered to upper levels.
- Standard Bottom Up: Input data can be entered to level 0 only.

Approvals and workflow functionality can be enabled only for Bottom Up versions.

As a best practice, the following versions are recommended:

- Working: Where users perform their tasks, including reviewing Actual Results and developing Plan and Forecast.
- 1st Pass: If you want to maintain multiple iterations of your Plan, you can preserve a pass of it in this version. You can create other members if you require more than one saved iteration. You can leverage the Copy Data functionality to move data to this version. Copy data copies data and textual input.
- What If: Provides a placeholder where users can change assumptions and analyze the outcome.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

After each dimension is loaded or updated in the build process, it's a best practice to refresh the application.

About the Currency Dimension

If you enabled multiple currencies for your application, you can add the currencies you use to plan and report.

You can then define exchange rates by scenario and year to be used in conversions. A calculation script is created that enables you to perform currency conversion. To enter exchange rates, click or tap Plans and open the form "Exchange Rates to Primary Reporting Currency."

Best practices:

- Limit the number of reporting currencies. Typically, customers have only one. If you have more, see [Setting Up Currencies](#) for more information.
- Enter exchange rates for each valid scenario and year combination.
- From this point on, currency conversion can be calculated by running the Calculate Currencies business rule that is associated by default with each form.
- An account's exchange rate type is modified, such as from Ending to Average.

Run the currency conversion calc script prior to:

- Reviewing any updated local data in reporting currencies
- Running certain calculations that may be dependent on reporting currency data

About Exchange Rates

Each application has a default currency that you specify when creating the application. When you set up exchange rate tables, you enter exchange rates from all source currencies to the default. Triangulation is used to convert to all other Reporting currencies.

Exchange rates are set by Scenario by year for Average and Ending Rates. For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

About the Period Dimension

Use the Period dimension to establish the calendar's range within a given year, for example, by month.

Best practices:

- Use substitution variables for this dimension to support reporting and calculations. Potential substitution variables are: 'CurrMo', 'CurrQtr', 'PriorMo'. These variables must be updated on a monthly basis.
- To use time period calculations such as Year to Date (Y-T-D) or Quarter to Date, select the dynamic time series icon in the Period dimension. You can then select which time period calculations you need to support your process.
- Summary time periods such as quarter totals and a year total should be set to dynamic calculate to reduce calculation time.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

After each dimension is loaded or updated, it's considered a best practice to refresh the application.

About Years

Years are incorporated into the application in many places, including forms, calculations, reports, and Smart View. Because you'll use the application for many years into the future, the best practice to referencing this dimension is by using a substitution variable.

Substitution variables act as global placeholders for information that changes regularly. The variable and value correspond to the year, and the value can be changed at any time.

The value of the substitution variable is displayed on forms and reports as a placeholder. This reduces maintenance for the application. Set substitution variables by going to Administration, then Manage, then Variables.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

As a best practice, create substitution variables for each year that is included in your process. For example:

Substitution Variable, Description

CurrY, Current Year

NextYr, Budget (Plan) Year

PriorYr, Prior Year

About Custom Dimensions

You can use a custom dimension to further categorize your data. For example, custom dimensions might include Product or Markets.

Access permissions can't be granted at the dimension level, also called generation one. For example, access permissions can't be assigned directly to the Product member for all descendants. If you enable security for your Custom dimension, it's recommended that you design generation two for all Custom dimensions to which security will be applied with security access assignments in mind.

For detailed information on adding dimensions and members using a load file, see [Importing and Exporting Data and Metadata](#).

After each dimension is loaded or updated, it's a best practice to refresh the application.

Refresh the Application

You must refresh the application whenever you change the application structure.

Changes made to the application are not reflected to users performing data entry and approvals tasks until the application is refreshed.

For example, when you modify properties of an Entity member, add a Scenario, or change access permissions, these changes are reflected to users after you refresh the application.

Load Historical Data

After you load all of your structures, such as accounts and entities, you can load historical data. This can include data from prior year actual results and current year plan and budget.

Loading historical data provides users a way to analyze results, review trends, and make meaningful comparisons.

It also helps verify the structures you have built into your application. For example, you can verify that data ties to previously created reports. If the data doesn't reconcile, you must verify if this is caused by a true data issue or if there is an issue with the structures.

An aggregation rule will need to be created to see consolidated data in your application. See [Aggregation Options](#) to learn how to create an aggregation rule.

About Valid Intersections

Valid intersections let Service Administrators define rules, called valid intersection rules, that filter dimensional intersections for users when they enter data or select runtime prompts. For example, you can specify that certain programs are valid only for specific departments. Leverage valid intersections to control data entry only to valid intersections.

For form design, if the dimensions that are set in the valid intersection are found on the Page, the user will be presented only with valid combinations in the member selector. If the dimensions that are set with valid intersections are found on the column or row, the form designer can suppress invalid intersections completely. When the suppression option isn't selected, invalid intersections are set to read only.

To learn more, see [Defining Valid Intersections](#).

About Forms

You'll build a number of forms to support data entry and summary-level reports. The form content is similar to the templates you use to collect and calculate data. The layout may differ from what you're currently accustomed to in spreadsheets.

You group forms within major categories such as Revenue, Compensation Expense, Other Expenses, and so on. You can create some forms to support data entry, and others for summary and review. You can also include charts to help users analyze results.

Users can enter text and data. They can also enter supporting detail by selecting an appropriate intersection in the form, and then clicking "Supporting Detail" to open a new input form that allows entry of additional detail for that intersection.

Form performance is based on several factors, including network and environmental factors, structure, layout, and so on.

Best practices:

- Put dense dimensions such as Account and Period on the row and column of a form. Put sparse dimensions such as Entity on the Page axis.
- Dimensions such as Scenario or Version and Year can reside on the POV, column, or row. It's important to properly gauge how columns or rows will be returned when a user opens the form.

Build Entry Forms

Create forms to enable users to enter information such as revenue, expenses, and assumptions.

Best practices:

- Group accounts logically, but don't include too many accounts on a single form.
- Limit the number of entry forms to an amount comfortable for end users. A delicate balance needs to be achieved between the number of accounts on a single form and the number of forms required to support your process.
- Use detail forms to enable users to enter all related information. All accounts that require input should be found on a form. The accounts can be broken down into several different forms.
- While building forms, ensure that you select all appropriate options to enhance the design of your form. For example, use settings to control precision, display, and menus, and to associate the proper rules with your form.
- Use Substitution Variables to reference dimensions such as Years.
- Suppress invalid Scenario/Time Period option, set Periods in row or column on the form to the Start and End Period set for the Scenario. Leveraging this functionality can be used instead of substitution variables for Years.
- Consider setting valid intersections to set relationships between different dimensions. Suppressing invalid combinations can be set in row or column to make only valid intersections available to end users. By default, only valid intersections will be available to the end users when the dimensions are set in the Page selection.
- Use relationships to incorporate members onto the forms instead of picking members individually.
- Consider using User Variables for dimensions such as Entity and Scenario to help reduce the dimension selection for end users.
- If your application supports multiple currencies, consider setting a User variable so users can define their base currency.
- Organize forms into folders.
- Substitution Variables reduce the maintenance on forms.

Build Detailed Revenue and Expense Forms

Detail forms should allow users to enter all revenue- and expense-related information. All accounts that require input should be found on a form.

Best practices:

- Group accounts logically, but don't include too many accounts on a single form.

- Limit the number of entry forms to an amount comfortable for end users. A delicate balance needs to be achieved between the number of accounts on a single form and the number of forms required to support your process.
- Use detail forms to enable users to enter all revenue related information. All accounts that require input should be found on a form. The accounts can be broken down into several different forms.
- While building forms, ensure that you select all appropriate options to enhance the design of your form. For example, use settings to control precision, display, and menus, and to associate the proper rules with your form.
- Building forms can be iterative to support users and processes.

Associate Rules with Forms

Associating rules with forms enables users with appropriate access to launch associated business rules from the form to calculate and derive values.

You can associate multiple business rules with a form by cube.

Business rules associated with a form can be set to launch automatically when the form is opened or saved. You can select Use Members on Form to populate runtime prompts from the current form instead of prompting users for input when rules are launched.

Best practices:

- For rules that take longer to run, set them to launch from an Action menu or simply through association with the form.
- If a business rule has runtime prompts, limit the number of prompts to keep the user's job simple.

Add Menus to Forms

You can associate menus with forms. Action menus allow users to click rows or columns in forms and select menu items to:

- Launch a business rule, with or without runtime prompts
- Move to another form
- Move to Manage Approvals with a predefined scenario and version

Menus are context-sensitive. The menus that display depend on the form settings and where users right-click in the form.

Best practices:

- When designing forms, use Other Options to select menus available for Form menu item types.
- As you update applications, update the appropriate menus. For example, if you delete a business rule referenced by a menu, remove it from the menu.

Build Data Validation Forms

Data validation can serve as a visual clue to users that business policies have been met. You can add conditional color coding to forms, and validation messages can be generated if entered data violates validation rules or if a condition is met.

Defining data validation rules involves these main tasks:

- Identify the data cells or location that you want to display with validation messages or in different colors when conditions are met.
- Identify the cell, column, or row that needs to participate during rule evaluation, and define the rule accordingly.
- Create the data validation rule at the location identified.

Organize Forms into Folders

Use folders as a way to organize the forms in your application. Forms can be grouped in folders by process or user type, or simply to help users readily find forms. You can move forms into folders, and you can create a folder hierarchy. Creating folders also simplifies assigning access because all forms in the folder will inherit the access permissions assigned.

Create Dashboards

Dashboards allow you to display information graphically or to display several forms simultaneously. You can also design interactive multi-chart dashboards to enable users to analyze their plan or forecast data. As another option, you can display a grid and a graph together, or you can combine multiple grids.

To create a dashboard:

- Drag and drop forms into the dashboard. Using the settings wheel to select the chart type desired for each grid.
- You can drag and drop as many forms as you would like, setting the size of the display by setting either the height or width for the component.
- Set dashboard settings to combine dimensions into a common POV.
- As a best practice, balance the number of components on the dashboard to ensure that it's visually pleasing to the user.

Build Summary Level Forms

Summary level forms typically bring together all of the pieces of a user's plan or forecast. They enable users to review and analyze their results.

Using dashboards can also be an effective way to help users analyze their results.

Build Financial Statements

Financial statements allow users to analyze performance and verify their assumptions. Financial statements could include Income Statement, Balance Sheet, and Cash Flow.

Typically, financial statements include comparative information so users can analyze their variances. Summary level information is typically built into financial statements with the ability to view detailed data by linking forms using menus.

Incorporate Business Logic

To incorporate your business logic into your application, calculations can be built using Calculation Manager. This enables you to create, validate, deploy, and administer sophisticated calculations that solve business problems.

You typically create business rules and rulesets to:

- Perform revenue modeling
- Perform expense modeling

- Calculate KPIs
- Perform allocations

Calculation Manager includes these objects:

- Rules: Contain components and templates
- Components: Assist you in building rules
- Rulesets: Contain rules that can be calculated simultaneously or sequentially

To learn more about creating calculations, see the Calculation Manager documentation.

Build Aggregations

Aggregations roll up your application to summary-level members in the dimension, such as Entity or any other sparse dimension.

Calculation Manager includes templates to help you build aggregations. The System Template Aggregation has several tabs. Here are some suggestions on how to use templates.

Set the Point of View

When the point of view is set, the rule will run only for the members chosen. Using a runtime prompt for the dimensions will allow users to specify member values for these dimensions when launching the rule. This way, users can launch the rule several times for different years, scenarios and versions without having to modify the rule in Calculation Manager.

Full dense aggregation

Complete this section if parent values in your dense dimensions are not set to dynamic calc. Typically this tab is left empty.

Full sparse aggregation

Select the sparse dimension that needs to be aggregated. The order of the selected dimensions isn't relevant.

Partial dimension aggregation: Dense

Complete this section if parent values in your dense dimensions are not set to dynamic calc. Typically this tab is left empty.

Recommended settings:

Aggregate the data up to the local currency: No

Aggregate the missing values in the Database: Yes

Optimize the Calculation on Sparse dimension: Off

Select a value for the calculator cache: Default

Do you want to activate the debug mode for this wizard?: Debug Wizard On or Debug Wizard Off. Select Debug Wizard On if you want to see a script generated to display selections for some of the Design Time Prompts in this template.

Best practices:

- Leverage runtime prompts for members such as Entity, Scenario, and Version. This allows your rule to be dynamic and run based on user input.
- Typically, dense dimensions such as Account and Period don't need to be aggregated. If this is the case, you can set parent members to dynamic calc. However, if you have

member formulas on dense dimensions and they are not set to dynamic calc, a Calc Dim rule is required.

Build Detailed Calculations

You use Calculation Manager to create, validate, deploy, and administer sophisticated calculations that solve business problems.

There are three types of objects that can be calculated in Calculation Manager:

- Rulesets: Contain rules that can be calculated simultaneously or sequentially (See [Administering Rules.](#))
- Rules: Contain components and templates (See [Administering Rules.](#))
- Components: Contain formula components, script components, condition components, range components, and fixed loop components (See [Administering Rules.](#))

Best practices:

- As a first step in building your rules, ensure that you understand the business logic and which entities or departments the rule applies to. For example, know the accounts that are involved in the rule.
- Be sure you know the source and destination accounts.
- After you fully understand the drivers of the calculation, use the proper object component or template to build the rule. The components and templates facilitate member selection to help deploy the rules.

Leveraging runtime prompts for members such as Entity, Scenario, and Version allows your rule to be dynamic and run based on user input.

Build Reports

Building reports allows you to report on your financials for management. In this step, you build your Income Statement and other detailed reporting with the proper formatting that your management team is accustomed to reviewing.

Report formats specify the layout of the report, such as which elements are on the rows and columns. Report formats can be used to create many different reports, such as by Cost Center or by Division.

Best practices:

- Before building reports, determine how many different report formats are required.
- To simplify building reports, specify a report format for each type of report you need.
- Begin building reports by arranging dimensions properly. Next, get the report to capture the data. Finally, apply formatting.

Build Task Lists

Task lists guide users through the planning process by listing tasks, instructions, and due dates. Task lists help flow users through the application to ensure that the process is followed and that all of the proper data has been collected.

Task lists should be developed to support the different types of users and process flows. Tasks can help users perform many types of tasks, such as:

- Open a form
- Launch a business rule that you specify

- Start the review process with a specified scenario and version
- Copy a version of the current form's data
- Open a specified URL

Tasks guide users through the planning process. Tasks can help users perform many types of tasks. They help flow users through the application to ensure that the process is followed and that all of the proper data has been collected.

Build tasks to support the different types of users and process flows.

Set Up the Navigation Flow

Navigation Flows set the clusters or cards available at the top of the user screen. The cards are typically associated with actions in your business process, such as Plan Revenue and Plan Expenses. Within each card, vertical tabs can be created to lead the user through the process for that business area. Forms can be linked to a vertical tab to guide the user in the process. Vertical tabs can have one or many horizontal tabs linking to either forms or dashboards.

Your application comes with a default navigation flow. To customize the cards and flow for your organization, copy the default, and then you can use it to make your own.

Tap or click Settings, then Navigation Flow. Tap or click Action, then Create Copy.

You can create a cluster to represent an entire business process that can contain cards for the actions, or you can simply create new cards. Cards can be designed to be single page or can have multiple tabs. For a card that is set up to be tabular, you can have multiple tabs that allow you to have content visible to the end user as horizontal tabs. You specify the content type for each of the tabs and link to an artifact.

For example, you can associate cards with:

- Dashboards
- Forms
- Rules
- Approvals

Set Up Access Permissions

Access permissions determine a user's privileges after the product launches. Most often, groups are established to help organize users. By definition, a user group is a set of users with similar access permissions.

Access permissions for groups and individual users can be assigned to these application elements:

- Scenarios
- Versions
- Accounts
- Entities
- Custom dimension members
- Forms
- Business rules

Users can be in a group:

- Service Administrator
- Power User
- User
- Viewer

Best practices:

- For dimensions secured by default, modify access permissions as needed.
- Assign access permissions to application elements such as dimension members, forms, and rules. Users can view or use only those application elements to which they have access.

About Users and Groups

Your company's users must be added to the Oracle Identity Management System prior to gaining access permissions to any of the elements in your application. Access permissions determine a user's privileges after the product launches.

By definition, a user group is a set of users with similar access permissions. The use of groups as a way to organize users and assign access permissions is a best practice.

Add Users

Users must be added to your environment, assigned privileges, and granted access to the application.

Users' roles will be defined as one of these types:

- **Service Administrator:** Creates and manages applications, including dimensions, forms, Calculations, and so on. The Service Administrator manages access permissions and initiates the budget process
- **Power User:** Creates and maintains forms, Smart View worksheets, and Financial Reporting reports. Can perform all User tasks.
- **User:** Enters and submits plans for approval, runs business rules, uses reports that others have created, and views and uses task lists. Leverages Smart View to enter data and do ad hoc analysis.
- **Viewer:** Views and analyzes data through data forms and any data access tools for which they are licensed. Viewers can't modify any data in the application. Typical View users are executives who want to see business plans during and at the end of the budget process.

Users, Power Users, and Viewers can access forms, task lists, and business rules based on permissions assigned by the Service Administrator.

Create Groups

It's highly recommended to leverage groups when assigning access permissions to users. Having groups of similar users eases security maintenance on an on-going basis. As users are added to groups, they inherit the access permissions of the group. Assigning group access permissions to elements such as dimension members, forms, and task lists means that you don't need to assign those access permissions individually for each user.

Best practices:

- If an individual user is assigned to a group, and the access permissions of the individual user conflict with those of the group, the individual user's access permissions take precedence.

- The use of groups for sets of users with similar access permissions should be well defined prior to implementing user access.
- Individual permissions override group permissions.
- If an individual is assigned to multiple groups, the group with the highest access permission takes precedence.

Access permissions assigned to a user directly override access permissions inherited from groups that the user belongs to. For example, if you have inherited read access to Plan from a group but are assigned write access to Plan directly, you get write access to Plan.

Assign Users to Groups

As a best practice, leverage groups as a way to reduce maintenance and assign similar access to users. Give users access to the appropriate groups.

Assign Access to Dimensions

In order for users to read or write data, access permissions must be assigned to the following dimensions:

- Account
- Entity
- Scenario
- Version

If security is enabled on custom dimensions, you must assign security to users to those dimensions as well. For dimensions secured by default, modify security access as needed.

Assign Access to the Account Dimension

Give users read or write access only to those accounts they are allowed to see. You can assign access privileges as Read, Write, None, or Display.

Best practices:

- Relationship functions should also be leveraged whenever possible to reduce on-going security maintenance. The relationship functions are: Member, Children, iChildren, Descendant, and iDescendant. For example, assigning Write access to Descendants of Net Income for a group allows all users of that group to have Write access to all accounts that are descendants of Net Income. This way, you don't need to assign access individually to each account.
- To take full advantage of the rules of precedence and inheritance, use an exception-based method for managing security. Primary assignment of security should be by group and relationship. Assign group rights to parent level members, and use relationships to push the assignments down to the children or descendants. Assign individual user rights to children on an exception basis.

Assign Access to the Entity Dimension

Give users read or write access only to those entities they are allowed to see. You can assign access privileges as Read, Write, None, or Display.

Assign Access to the Scenario Dimension

Access to Scenario is typically set to Read or Write. For example, you may want to assign access to Actual and Variance scenarios as Read, and to Plan and Forecast as Write.

Assign Access to the Version Dimension

Access to Version is typically set to Read or Write. For example, you may want to assign access to Final Version as Read, and to Working as Write.

Assign Access to Custom Dimensions

If security is enabled on any custom dimension, you must assign security to the dimension in order for users to have access.

Assign Access to Forms

Before users can open forms, they must be assigned access permissions.

Users who are assigned access to a form folder can access the forms in that folder unless they are assigned more specific access.

Users and Power Users can view or enter data only into forms to which they have access. They can work only with members to which they have access.

Tips:

- To simplify assigning access to forms, organize forms into folders and assign access at the folder level instead of the individual form level. Access permissions can be set to Read, Write or None.
- When you assign access to a folder, all folders under it inherit that access.
- If you assign specific access (such as None or Write) to a form folder, that access permission takes precedence over its parent folder's access permissions. For example, if a user has Write access to Folder1 that contains Folder2 to which the user has None access, the user can open Folder1, but doesn't see Folder2.
- If a user has None access to a form folder called Folder1 that contains a form called Form1 to which the user has Write access, the user can see Folder1 and Form1.

Assign Access to Business Rules

Before users can launch business rules, they must be given access permissions to the rules.

As a best practice, organize business rules into folders that have similar user access, and apply security to the folders. You can also give access permissions to individual business rules, although this is a little more time-consuming.

Users have Launch access to Calculation Manager business rules in folders to which they are assigned access, unless they are assigned more specific access

Assign Access to Task Lists

In order to navigate through the application, users must be assigned access to individual task lists.

As a best practice, assign access using groups. This is more efficient than applying access to individual task lists.

Assign Access to Reports

Users must be assigned access to a report before they can use it.

As with other artifacts, it's recommended that you organize reports into folders and assign access at the folder level. This limits the amount of maintenance required for security. As reports are added to the folder, access is inherited from the folder.

Build Approvals

Use approvals to track budgets and review status, planning unit ownership, and process issues. This reduces the time required for the planning cycle.

Set up the approval path independent of organizational structure to reflect the path a plan or forecast must follow for approval.

Users can provide annotations and comments for their submissions.

Set up the Planning Unit Hierarchy

Setting the planning unit hierarchy defines the promotional path used in approvals. The basis of the planning unit hierarchy is the Entity or any part of the Entity dimension in combination with any secondary dimension.

The secondary dimension can be a mix between several dimensions, depending on where you are in the workflow. For example, you can combine the Entity dimension with the Products dimension in the promotional path for certain entities, while using the Channels dimension in the promotional path for other entities.

Owners and reviewers can be directly assigned the planning unit. Validation rules can be created to handle conditional promotion path dependent on data conditionals. You create different planning unit hierarchies to support review processes within your organization

The planning unit hierarchy is then assigned to the appropriate Scenario and Version combination.

Planning units are combinations of scenario, version, and entity or part of an entity. Scenarios and versions are the basis of the review cycle. A planning unit hierarchy contains planning units and any other dimensions that are part of the review process.

Things to know about approvals:

- The review process follows the promotional path you set up when you select the owner and reviewers for a planning unit, unless an event triggers a change in the promotional path.
- Parent/child relationships between planning unit hierarchy members affect the review process
- When users promote or reject a parent, the parent's children are promoted or rejected unless they are approved. The owner for the parent becomes the owner of the children.
- When users approve a parent, its children are approved.
- After all children are promoted to the same owner, the parent is promoted to the owner.
- When the status of all children changes to one status, for example Signed Off, parent status changes to the same status.
- Users can't change the status of a parent if its children have different owners.
- If the children are promoted to, submitted to, or signed off by different users, the parent has no owner and only Service Administrators can change its status.
- The planning unit moves from one reviewer to another until the budget process is complete.

Test

Testing is a critical step in application development. All of the calculations, access permissions, and reports must be tested to ensure that they work appropriately.

About Unit Testing

Unit testing is the first step of formalized testing, and is the main building block of the test environment. Unit testing involves testing each functional area of the application as a separate unit to ensure that it performs as expected.

For example, a test could confirm that a data load executes to completion without errors. Other tests could confirm that forms and reports are accessible, calculations complete, and so on.

The person that builds or configures the application usually conducts unit testing.

About System Testing

System testing validates that the system operates without error and provides the required functionality.

The main emphasis is to test the way in which the application has been configured and to look at how the team has constructed the business processes and reports. System testing focuses on testing the entire system, including unique parameter configuration, all functions that will be used, and any enhancements.

System testing also looks beyond the software, and validates the effectiveness of manual procedures, forms and controls. It's a complete set of formal functional tests covering all aspects of functionality within the system being built.

This type of test is often combined with:

- **Security Tests:** Tests that the system security and database security is appropriate for the overall system and each specific user.
- **Integration Tests:** Tests the overall business solution, including the passage of data to and from other integrated systems. This confirms that the functionality remains valid when all aspects of the system have been combined.
- **User Acceptance Tests:** Users validate that the system operates correctly and meets requirements. If users are not involved in formal system testing or they request specific tests, there may be a need for further acceptance tests. However, in most cases, this type of testing is done as part of System and Integration Tests, provided that users recognize these tests as adequate for acceptance purposes.

Rollout

During rollout, you can train end users on the system, and show them how to navigate and use functionality. As a best practice, document your system to enable someone else to take over administration if necessary.

Training

All users of the system should be trained on the application. Users need to learn how to navigate comfortably around the application and understand the tasks assigned to them. Training should include logging into the application, navigating through task lists, entering data, running rules, using Smart View, and using tools within the application. Training is typically the user's first exposure to the application, and a well planned and executed training session helps make a good first impression.

Document System and Administrative Information

After building your application, it's recommended that you create system and administrative documentation for the application.

Best practices:

- Create this documentation at the end of the Build Process when the information is fresh.
- Include information such as the sources of data, the application structure, how calculations work, and what maintenance is required for the application.

List maintenance tasks broken down into timeframes, such as monthly and annual maintenance. This makes it possible for someone else to take over the system later if necessary.

Enable the Application for Users

To enable the application for end users, you must open up the system enabling. In addition, start planning units to enable approvals.

Start Planning Units

The planning unit must be started before users can access the system to begin the review process. After it's started, the planning unit moves from one reviewer to another until the process is complete.