

**ORACLE®**

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**PRIMAVERA**

**Cloud Service Administrator's Guide  
15 R2**

March 2016



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# Using the Primavera Cloud Service Administrator's Guide

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This guide has been specifically created for cloud administrators so that they do not need to use the installation or configuration documents that are found in each of the Primavera product libraries. For more information about the information options available to cloud administrators, refer to **For More Information** (on page 227).

After cloud administrators receive their login credentials from Oracle, they should ensure that their web browser is configured by using the tasks in *Web Browser Setup Tasks*. Then, cloud administrators should create and provision users using the information in *Identity & Access Management Setup Tasks*. After cloud administrators have completed the activities in *Web Browser Setup Tasks* and *Identity & Access Management Setup Tasks*, they should review the setup tasks associated with the applications that are included in their Primavera Cloud Service.

This guide contains setup tasks and reference information for all of the Oracle Primavera products, as well as information specific to the Identity Management & Access Suite, BI Publisher, and BPM. Each product is represented in this guide as a single chapter. Also, some products might be listed as sub-chapters for other products in this guide; these sub-chapters represent integrated solutions that have setup tasks specific to that integration (For example, P6 EPPM is listed as a sub-chapter for BI Publisher).

## Web Browser Setup Tasks

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Features, such as exporting to Microsoft Excel and resolving null pointer exceptions, require additional configuration settings on web browsers. Some settings are required for a feature to work, while others are only necessary under certain conditions. You must configure your settings on each web browser.

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### Configuring Settings for Microsoft Internet Explorer

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**Note:** Before you begin, ensure you are using the supported version of Microsoft Internet Explorer. See the *Tested Configurations* document for more information.

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- 1) Open **Microsoft Internet Explorer**.
- 2) Go to **Tools, Internet Options**.
- 3) In the **Internet Options** dialog box, select the **Privacy** tab:
  - a. In the **Pop-up Blocker** section, deselect the **Turn on Pop-up Blocker** option.
  - b. In the **Settings** section, click **Advanced**.
  - c. In the **Advanced Privacy Settings** dialog box, deselect the **Override automatic cookie handling** option.
  - d. Click **OK** to exit all dialog boxes.

### Configuring Settings for Mozilla Firefox

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**Note:** Before you begin, ensure you are using the supported version of Mozilla Firefox. See the *Tested Configurations* document for more information.

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- 1) Open **Mozilla Firefox**.
- 2) Go to **Open Menu, Options**.
- 3) In the **Options** dialog box:
  - a. Select the **Content** tab.
  - b. Deselect the **Block pop-up windows** option.
  - c. Click **OK**.

## Configuring Settings for Apple Safari

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**Note:** Before you begin, ensure you are using the supported version of Apple Safari. See the *Tested Configurations* document for more information.

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- 1) Open **Apple Safari**.
- 2) From the **Settings** dropdown, select **Preferences**.
- 3) In the **General** dialog box, select **Security**.
- 4) In the **Web Content** section, deselect **Block pop-up windows**.
- 5) Close the dialog box.

## Oracle Identity and Access Management Setup Tasks

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Oracle Identity & Management (IDM) is the term used to describe the identity management applications that you use to manage users in your cloud environment.

The following list describes all of the applications that are associated with IDM:

- ▶ **Primavera Cloud Administration** – Primavera Cloud Administration is the primary application with which you will administer users in your cloud environment.
- ▶ **Oracle Identity Manager (OIM)** – OIM is an identity management application that can be used for advanced administration tasks.

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**Note:** Auditing and Reporting are not supported.

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- ▶ **Oracle Internet Directory (OID)** – OID is the directory store that maintains users and groups. All user information is stored in OID.

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## Accessing Accounts

Depending on your company's cloud-environment configuration, you will be required to either log in to the Primavera Cloud Portal through one of your company's web pages or through an Oracle-provided, login webpage.

When a user logs in to the cloud environment for the first time, they will be required to reset their password and to set their challenge questions. For more information about logging in to the cloud environment for the first time, see **Logging into an Account for the First Time** (on page 13). After a user logs in to the cloud environment, they will be redirected to the the Primavera Cloud Portal. For more information about the Primavera Cloud Portal, see **About the Primavera Cloud Portal** (on page 14).

## Logging into an Account for the First Time

When users log in to the Primavera Cloud Portal for the first time using their usernames and temporary passwords, which are provided to them by a cloud administrator, they must reset their passwords and set their challenge questions.

Unless otherwise specified, passwords must adhere to the following default password policy:

A password can contain the following character types as long as it has met the minimum character requirements:

- ▶ English Uppercase Characters (A-Z)
- ▶ English Lowercase Characters (a-z)
- ▶ Base 10 Digits (0-9)
- ▶ Non-alphanumeric Characters (for example, !, \$, #, or ^)
- ▶ Unicode Characters

The minimum password character requirements require a minimum of eight characters that include at least:

- ▶ Two alphabet characters
  - ▶ One Numeric Character
  - ▶ One Alphanumeric Character
  - ▶ One English Uppercase Character (A-Z)
  - ▶ One English Lowercase Character (a-z)
- ▶ One Base 10 Digit (0-9)

A password cannot contain a user's First Name, Last Name, or User ID.

A password expires after 180 days. A warning will be sent to a user 30 days before the expiration date to remind them to change their password.

To log in to an account with new access information:

- 1) Navigate to the log in page with the link that has been provided to you by your administrator.
- 2) Enter your login credentials into the required fields.
- 3) Click **Login**.
- 4) In the **Password Management** page, update your password by doing the following:

- a. In the **Old Password** field, enter the password that is currently associated with your login username.
  - b. In the **New Password** field, enter a new password.
  - c. In the **Confirm New Password** field, enter the password that you entered in the **New Password** field.
- 5) In the **Password Management** page, register your challenge questions by doing the following:
- a. In the **Question** drop-down lists, select your challenge questions.
  - b. In the **Answer** fields, enter the answers to the corresponding questions.
- 6) Click **Submit**.

## About the Primavera Cloud Portal

The Primavera Cloud Portal is the website with which you, and every active (enabled) user, will use to access all of their relevant cloud content, which includes links to:

- ▶ Oracle Primavera applications, such as: Primavera Gateway, Oracle Primavera Prime, P6 Professional, P6 Team Member, P6 EPPM, Analytics, Primavera Unifier, and Primavera Cloud Administration
- ▶ Oracle Fusion Middleware applications, such as: BI Publisher, BPM, Oracle Business Intelligence EE, and Oracle Identity Manager
- ▶ Web Services URLs
- ▶ Product tutorials
- ▶ Administration Documentation

Only the applications that your company licenses will display on the Primavera Cloud Portal. For example, if your company has licenses for the P6 EPPM and Primavera Unifier applications, links or content for Analytics, Oracle Primavera Prime, and other non-licensed applications will not display in the portal.

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**Note:** All of the users that have been created in your cloud environment, regardless of provisions, will be able to view and click on the links to each application, tutorial, or documentation. However, users must be assigned the correct roles and account instances to access and use an application. For more information about the roles and account instances needed for each application in your cloud environment, see **About Provisions** (on page 25).

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## Using Primavera Cloud Administration

Primavera Cloud Administration is the main application with which you perform the following administrative tasks:

- ▶ Create new users
- ▶ Provision users
- ▶ Deprovision users
- ▶ Unlock users
- ▶ Reset passwords
- ▶ Disabling Users
- ▶ Enabling Users
- ▶ View user information
- ▶ View user provisioning assignments

Primavera Cloud Administration contains a table and a details pane. You can perform all of the administrative tasks (except for viewing user provisioning assignment) with the table. You can use the details pane to view provisioning assignments for each user in the table. For more information about the table and the details pane, refer to the following sections:

***About the Table***

***About Importing Users*** (on page 18)

For more information about Primavera Cloud Administration, its features, and its procedures, see the *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>.

## About the Table

The table facilitates the creation of new users in the cloud. You can add new users in the first row of the table one at a time, import them in bulk to the table, and edit the fields that are associated with them in the table. If you log out of a session of Primavera Cloud Administration before you save new users to the cloud, any information that was added to the table during that session will be removed from the table. For more information on how to save a draft of your work, see ***Exporting Changes from the Table*** (on page 22).

The table also displays all of the users that have been previously created in the cloud. You are unable to edit the fields associated with created users in the table. For more information regarding the procedures that are associated with editing user information, see ***Advanced Identity Management Tasks*** (on page 35).

Each row in the table represents a single user and the columns in the table represent the information that is associated with each user. For more information about each column in the table, see the table below.

Column Name	Description
Last Name	The last name of the user.

First Name	The first name of the user.
Email	The email address of the user.
User Name	The user name with which a user logs in to the cloud.
Organization	The organization to which the user belongs.
User Type	The type of user in the system. By default, all users are set to Employee when they are added to the table.
Provisions	The roles and or accounts that are associated with the user.
Date and Time Added	The date and time on which the user was successfully created. The format of the date is Month - Day - Year.
Added By	The user name of the administrator that created the user.
Last Action	The last action applied to the user as well as the date at which the action. The format of the date is: Month - Day - Year.
Status	<p>The status of the user. By default, users do not have a status in the table until you attempt to save them to your cloud environment.</p> <p>If the status is Success, the user was successfully saved to your cloud environment. Users that have been successfully saved to you cloud environment and provisioned are able to access the applications to which they have been provisioned.</p> <p>If the status is Application provisioning failed, the user was saved to the cloud environment but was not provisioned.</p> <p>If the status is User creation failed, then the user was not saved to the cloud environment.</p>



Use the following topics in the *Primavera Cloud Administration Tasks* (on page 22) to create and provision users by manually adding them to the table:

- 1) **Creating a User with the Table** (on page 22)
- 2) Provision your users using one of the following topics:
  - ▶ **Managing the Provisions of One User** (on page 27)
  - ▶ **Managing the Provisions of Multiple Users** (on page 28)
- 3) **Saving Users to the Cloud** (on page 31)
- 4) **Resetting User Passwords** (on page 33)

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**Note:** For a demonstration on how to create and provision users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Adding Users and Managing Provisions**.

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## Table Filters

By default, the table sorts users by the most recent date in the Date Added column. As you add users to the table, those users appear in the rows at the top of the table in the order in which they are added. After new users are created in the cloud, Primavera Cloud Administration sorts the new users in the table depending on your sort settings.

You can filter which users that you want to view in the table with the four filters that are located above the table. The filters are All, Unprovisioned, Modified, and Failed. The following list describes the behavior of each filter:

**All:** The **All** filter displays every user that exists in the table; this includes users who have been previously created in the cloud and the users that have been added to the current session of Primavera Cloud Administration. After you save a current session of Primavera Cloud Administration, the users that had been added to the table will be created in the cloud and they will be sorted.

**Unprovisioned:** The **Unprovisioned** filter displays any user that has not been provisioned; this includes users who have been previously created in the cloud, users that have failed to be provisioned, and users that have been added to the current session of Primavera Cloud Administration. After you save users with provisions, those users will not appear in this filter.

**Modified:** The **Modified** filter displays the users who have not been saved and users who have had their data modified in a current session of Primavera Cloud Administration; this includes users that are added to the table and previously created users who are assigned provisions. After you save your session of Primavera Cloud Administration, the users that you added or assigned provisions will not appear in this filter.

**Failed:** The **Failed** filter displays the users who have failed to be provisioned. If a user exists in this filter, you can attempt to provision them again. For more information about how to reattempt a provision that failed, see *Reattempting Failed Provisions* (on page 30).

**Disabled:** The **Disabled** filter displays the users who have been disabled in the cloud environments, which means that they will be unable to log in to any Oracle Primavera Applications. If a user exists in this filter, you can enable their account so that they can access any Oracle Primavera application for which they have been provisioned. For more information on how to enable or disable users, see **Enabling User Accounts** (on page 33) or **Disabling User Accounts** (on page 34).

**Locked:** The **Locked** filter displays the users who have been locked out of their accounts. If users exist in this filter, you can unlock them. For more information on how to unlock users, see **Unlocking User Accounts** (on page 32).

### The Details Pane

The details pane shows you the provisioning assignments of users in the table and it appears empty until you select a user. When a user is selected, you can alternate between the Roles tab and the Application Instances tab to view all of the provisions assigned to the user. The Roles tab displays the roles with which a user is assigned. The Application Instances tab displays the account name and the provisioning status of assigned application instance. The status of an application instance can either be Provisioned or Provisioning. After a user has been successfully provisioned with an application instance, that application instance will show the Provisioned status. If a user account is being processed or if the provision fails to be assigned to the user, the application instance will have a status of Provisioning.

## About Importing Users

Use a custom Microsoft Excel template to import multiple users into your cloud environment. You can either import a custom import template or exported changes from a previous session.

The template is a CSV file that you can download from the Primavera Cloud Administration, add user information and provisioning assignments locally, and then import that information to your table. The following fields that appear in every template and are required for each user to be added to your cloud environment:

Column Name	Description
Last Name	The last name of the user.
First Name	The first name of the user.
Email	The email address of the user.
User Name	The user name with which a user logs in to the cloud.
Organization	The organization to which the user belongs.
User Type	The type of user in the system. By default, all users are set to Employee when they are added to the table.

When you attempt to download the template, the Select Provisions for Template dialog box will appear. You can use the Select Provisions for Template dialog box to add a column to your template for each of the provisioning assignments that you select. Each column is associated with a single provisioning assignment, has the same name as the role or application instance that it represents, and is prepended with either #R# for role or #A# for application instance. For example, if you selected the BIAuthors role and PrimaveraP6 application instance in the Select Provisions for Template dialog box, two columns called #R#BIAuthors and #A#PrimaveraP6 will appear in the template.

**Caution:** Do not modify the header row. Modifying the header row of the template can produce unpredictable results when importing users into Primavera Cloud Administration.

Use the following topics in the *Primavera Cloud Administration Tasks* (on page 22) to create and provision multiple users by means of import:

- 1) **Creating a Custom Import Template** (on page 23)
- 2) **Importing Users to the Table** (on page 24)
- 3) **Saving Users to the Cloud** (on page 31)
- 4) **Resetting User Passwords** (on page 33)

**Note:** For a demonstration on how to import users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Importing Users in Bulk**.

## About Notifications

Notifications are brief updates about your work within the Primavera Cloud Administration. You receive notifications after you attempt to save any changes that you have made to the cloud. When you receive a notification, the title of the notification will appear bold in the Notifications list until you open it. Once you open a notification, the title of the notification will become grayed out.

**Note:** You can only view notifications of the actions that have been made with the account with which you access Primavera Cloud Administration.

Notifications let you view any attempts that you made to save table changes to the cloud. For each notification, you can:


- ▶ the number of days since the notification was sent to the account.
- ▶ view the number of users that were saved to the cloud.
- ▶ view the number of users that failed to be saved to the cloud.
- ▶ export a log with the information about users who have failed to be saved to the cloud.
- ▶ download a log file that contains information about the saving process.

Use the following topics to learn more about the tasks that are associated with the Notifications list.

## Marking Notifications as Read

After you select a notification in the list, the notification will be expanded until you mark the notification as read. Marking a notification as read minimizes the notification.

To mark a notification as read:

- 1) Click  **View notifications.**
- 2) Select an open notification.
- 3) Click **Mark as Read.**

## Refreshing Notifications

Refreshing your notifications ensures that you are able to view all of the notifications that are associated with your account that you have not deleted.

To refresh your notifications:


- 1) Click  **View notifications.**
- 2) Click  **Refresh.**

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## Deleting a Notification

Deleting a notification permanently removes a notification from the Notifications list.


To delete a notification:

- 1) Click  **View notifications**.
- 2) Select a notification that you want to delete.
- 3) Click **X**.

## Downloading the Log File

You can use the Primavera Cloud Administration log to view detailed information about the processes that occur when you attempt to save users to the cloud. If a user fails to be provisioned, you can use the log to try and determine why the user failed to be provisioned.

To download the Primavera User Administration log:

- 1) Click  **View notifications**.
- 2) Select the notification that corresponds to the log file that you want to view.
- 3) Click **Download Log**.

## Exporting a List of Users that Failed to be Provisioned

You can export a CSV file called `Primavera_Create_User_<date>.csv` that contains a list of the users that have failed to be provisioned for each save attempt. The file contains all of the information that is associated with the user, such as:

- ▶ Last Name
- ▶ First Name
- ▶ Email
- ▶ User Name
- ▶ Organization
- ▶ Provisioning Assignments


---

**Note:** Do not modify any information in the CSV file other than provisioning assignments. If you need to modify user information, refer to ***Editing a User's Attributes*** (on page 35).

---

Use the CSV file to update user provisioning information, upload it back to the table, and retry to provision the users. For more information about reattempting to provision users that have failed to be provisioned, see ***Reattempting Failed Provisions*** (on page 30).

To export a list of the users that failed to be provisioned:

- 1) Click  **View notifications**.
- 2) Select a notification that has users that have failed to be provisioned.
- 3) Click **Export Failed Users**.

## Primavera Cloud Administration Tasks

The tasks in this section document all of the tasks associated with the table in the Primavera Cloud Administration.

---

**Note:** While the sections below might reference a filter with regards to a specific task, you can perform any task in any filter.

---

### Creating a User with the Table

To create a user with the table:

- 1) Enter the user information in the first row of the table.
  - ▶ In the **Last Name** field, enter the last name of the user.
  - ▶ In the **First Name** field, enter the first name of the user.
  - ▶ In the **Email** field, enter the email address of the user.
  - ▶ In the **User Name** field, enter the username of the user.
  - ▶ Double-click the **Organization** field and select an organization.
  - ▶ In the **User Type** field, open the list and select a user type.
- 2) Provision the user.

For more information about provisioning users, refer to *Managing the Provisions of One User* (on page 27) or *Managing the Provisions of Multiple Users* (on page 28).
- 3) Click Save. For more information about saving users, refer to *Saving Users to the Cloud* (on page 31).

---

**Note:** For a demonstration on how to add users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Adding Users**.

---

### Exporting Changes from the Table

You can save any changes that you have made to the table by exporting your changes to a CSV file, which can be stored locally. The CSV file contains all of the information that you added to the table during your current session of Primavera Cloud Administration. Later, when you open a new session in Primavera Cloud Administration, you can import the changes that were stored in the CSV file back into the table.

To save a draft of your progress:

- 1) Click **Export Changes**.

---

**Note:** The Export Changes button appears after you alter the contents of the table for the first time in a new Primavera Cloud Administration session.

---

---

## Creating a Custom Import Template

To create a custom import template:

- 1) Select **Download Template...** from the drop-down list.
- 2) Select the provision assignments that you want to add to the template.
  - ▶ Use the **Search** field to find a specific provisioning assignment.
  - ▶ Expand **Roles** and **Application Instances** to view the lists of roles and applications instances.
- 3) Click > **Add column to Selected Columns**.
- 4) Click **OK**.
- 5) Save the template locally and then open it. By default, the name of the template is `Primavera_User_Import_Template.csv`.
- 6) Enter the user's information into the following fields:
  - ▶ **First Name**
  - ▶ **Last Name**
  - ▶ **Email**
  - ▶ **User Name**
  - ▶ **Organization**
  - ▶ **User Type**
- 7) In the role or application instance fields, enter one of the following inputs to a provisioning assignment field to add that provisioning assignment to the user:
  - ▶ Y
  - ▶ Yes
  - ▶ yes
  - ▶ 1
  - ▶ true
  - ▶ t

Alternatively, leave the field empty if you do not want to add the provisioning assignment to a user.

- 8) Save the template.

---

**Note:** For a demonstration on how to import users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Importing Users in Bulk**.

---

## Importing Users to the Table

To create users by importing them to the table:

- 1) Click **Import...**
- 2) Select your CSV file and then click **OK**.
- 3) Ensure that there are no errors in the table.
- 4) Save the users to the cloud. For more information about uploading users, refer to **Saving Users to the Cloud** (on page 31).

---

**Note:** For a demonstration on how to import users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Importing Users in Bulk**.

---



## About Provisions

Provisioning is the process by which you authorize specific employees in your organization to access specific Primavera Cloud applications. Employees who are not provisioned to your Oracle Primavera applications will not be able to access any of your Oracle Primavera applications.

The two types of provisions in Primavera Cloud Administration are roles and accounts. Users need a combination of roles and accounts in order to gain access to certain Oracle Primavera applications and functionalities within those applications. Refer to the following sections for information about which roles and accounts are needed to access the different Oracle Primavera applications and functionalities.

---

**Note:** In addition to being assigned roles and account instances for application access in your cloud service, you must also provide application-specific security assignments to your users in their target application. For more information about application-specific security assignments that are required to use a particular product, refer to the application administration guide that is specific to the application for which you are provisioning users.

---

## Accounts

Access to P6 EPPM, P6 Professional, or Analytics requires users to have **P6 Account Instance**.

Access to Primavera Unifier or Analytics requires users to have **Primavera Unifier Application Instance**.

## Roles

The following table contains a list of the Oracle Primavera applications and the roles that can be assigned to users for each application:

Oracle Primavera Applications	Roles
P6 EPPM	BI Consumer BI Author BPM Project Viewer BPM Project Creator
P6 Professional	Primavera Virtual Desktop User
Primavera Unifier	BI Consumer BI Author
Oracle Primavera Prime	Primavera Users Partner Users
Analytics	p6rdbuser BI Administrator
Primavera Gateway	Primavera Gateway Admin Primavera Gateway Developer Primavera Gateway User
Primavera Cloud Administration	Primavera Cloud Admin

## Role Descriptions

**BI Consumer:** Users who are assigned this role can run and view all of the reports that were made available to their folders.

**BI Author:** Users who are assigned this role can create, run, and view all of the reports that were made available to their folders.

---

**Note:** By default, data sources to product schema, such as P6 EPPM, Oracle Primavera Prime, Primavera Unifier, are preassigned to the BI Consumer and BI Author roles.

---

**BPM Project Creator:** Users have access to BPM and can read, write, and close BPM projects.

**BPM Project Viewer:** Users have access to BPM and can read BPM projects.

**p6rdbusers:** Users have access to Analytics and can run an ETL.

**p6sec:** Users have access to UCM for Primavera applications.

**Primavera Users:** Users who are assigned this role can log in to login to Oracle Primavera Prime.

**Partner Users:** Partner users who are assigned this role can log in to Oracle Primavera Prime.

**Primavera Gateway Admin:** Users who are assigned this role have complete access to Primavera Gateway as a user, developer, and administrator. Assign this role to create a Primavera Gateway administrator with complete administration privileges and access to data.

**Primavera Gateway Developer:** Users who are assigned this role can create new providers for Primavera Gateway and can customize delivered providers to support their ERP.

**Primavera Gateway User:** Users who are assigned this role can create, run, and monitor synchronization jobs in Primavera Gateway. Assign this role to create Primavera Gateway users with access to data.

**Primavera Cloud Admin:** Users who are assigned this role can log in to Primavera Cloud Administration and can administer users.

**Primavera Virtual Desktop User:** Users who are assigned this role can log in to P6 Professional using Primavera Virtual Desktop.

---

## Managing the Provisions of One User

The **Manage Provisions** dialog box contains two columns. The left column contains all of the roles and account instances that have not been assigned to a user and the right column represents all of the roles and application instances that have been assigned to a user. When provisioning a user, you will open the **Manage Provisions** dialog box, move roles and application instances between the left column and the right column, and then save the modification.

---

**Note:** For a demonstration on how to manage user provisions, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Managing Provisions**.

---

## Provisioning a User

To provision one user using the **Select Provisions** dialog box:

- 1) Select the checkbox of a user.
- 2) Open the **Manage Provisions** dialog box by completing one of the following:
  - ▶ Click **Manage Provisions**.

---

**Note:** The **Manage Provisions** button appears when you select a checkbox.

---

- ▶ Click **⚙ Actions** and then click **Manage Provisions**.
  - ▶ Right-click the table and then click **Manage Provisions**.
- 3) Click **⋮ Select**.
  - 4) Select the roles or application Instances that are applicable to the users.
  - 5) Click **> Add provisions to Selected Provisions**.
  - 6) Click **OK**.
  - 7) Save the user to the cloud. For more information about saving a user, refer to **Saving Users to the Cloud** (on page 31).

## Deprovisioning a User

To remove a role or application instance from a user:

- 1) Select the checkbox of a user.
  - 2) Open the **Manage Provisions** dialog box by completing one of the following:
    - ▶ Click **Manage Provisions**.
- 
- Note:** The **Manage Provisions** button appears when you select at least one checkbox.
- 
- ▶ Click **⚙ Actions** and then click **Manage Provisions**.
    - ▶ Right-click the table and then click **Manage Provisions**.
  - 3) Click **⋮ Select**.
  - 4) Select the Roles or Application Instances that that you want to remove from the user.
  - 5) Click **< Remove column from Selected Columns**.
  - 6) Click **OK**.
  - 7) Save the user to the cloud. For more information about saving users, refer to **Saving Users to the Cloud** (on page 31).

---

## Managing the Provisions of Multiple Users

When managing the provisions of multiple users, you will use the **Manage Provisions** dialog box. The **Manage Provisions** dialog box offers the following functionalities:

- ▶ View the users who have been provisioned with specific roles or application instances
- ▶ Add provisions to users
- ▶ Remove provisions from users

The **Manage Provisions** dialog box contains the **Available** column and the **Users Provisioned to** table.

The **Available** column contains all of the available roles and application instances that are associated with your cloud environment. Depending on the number of users whom you had selected prior to opening the **Manage Provisions** dialog box, the following icons will display next to a role or application instance name:

- ▶ **● All Users Provisioned:** All of the previously selected users have been provisioned with the role or application instance.
- ▶ **◐ Provision Selected Users:** A number of users, less than all of them, that have been provisioned with the role or application instance.

---

**Note:** For a demonstration on how to manage user provisions, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Managing Provisions**.

---

## Provisioning Multiple Users

To provision multiple users:

- 1) Select two or more users in the table.
- 2) Open the **Manage Provisions** dialog box by completing one of the following:
  - ▶ Click **Manage Provisions**.

---

**Note:** The **Manage Provisions** button appears when you select at least one checkbox.

---

- ▶ Click **⚙ Actions** and then click **Manage Provisions**.
  - ▶ Right-click the table and then click **Manage Provisions**.
- 3) In the **Available Provisions** column, select the role or application instance that you want to assign to the selected users.
  - 4) In the **Select or Deselect Users** table, select the check boxes of the users whom you want to provision.
  - 5) Click **Ok**.
  - 6) Save the user to the cloud. For more information about saving a user, refer to ***Saving Users to the Cloud*** (on page 31).

## Deprovisioning Multiple Users

To deprovision multiple users:

- 1) Select two or more users in the table.
- 2) Open the **Manage Provisions** dialog box by completing one of the following:
  - ▶ Click **Manage Provisions**.

---

**Note:** The **Manage Provisions** button appears when you select at least one checkbox.

---

- ▶ Click **⚙ Actions** and then click **Manage Provisions**.
  - ▶ Right-click the table and then click **Manage Provisions**.
- 3) In the **Available Provisions** column, select the role or application instance that you want to remove from the selected users.
  - 4) In the **Select or Deselect Users** table, deselect the check boxes of the users whom you want to deprovision.
  - 5) Click **Ok**.
  - 6) Save the user to the cloud. For more information about saving a user, refer to ***Saving Users to the Cloud*** (on page 31).

## Reattempting Failed Provisions

If users are unable to receive their provisioning assignments after you save the provisioning assignments that you made in a current session of Primavera Cloud Administration, you can attempt to provision them again.

Users might fail to be provisioned if they are assigned a provision that is not available to their assigned organization, they are Primavera Unifier users who have been assigned provisions that do not exist for a company, or if there is an issue connecting to either OID or OIM. For more information about why a user might not be provisioned, refer to

To reattempt to provision users:

- 1) (Optional) Determine why users have failed to be provisioned, modify the incorrect information, and upload them back to the table.
  - a. Review the log files for the save attempt in which the users failed to be provisioned. For more information, refer to **Downloading the Log File** (on page 21).
  - b. Download a list of the users that have failed to be provisioned. For more information, refer to **Exporting a List of Users that Failed to be Provisioned** (on page 21). Alternatively, you can modify provisioning assignments in the table.
  - c. Modify the incorrect provisioning assignments and then save the CSV file.
  - d. Click **Import...** and then select the CSV file that you want to import back into the table.
  - e. Click **OK**.
- 2) Click **Failed**.
- 3) Select the check boxes of the users whom you want to try to provision.
- 4) Click **Retry Provision**.

---

### Notes:

- If users fail to be provisioned because they are assigned a provision that is not available to their assigned organizations, you can change their organizations in OIM to an organization in which the provisioning assignments are applicable to them. For more information about editing user information, see **Editing a User's Attributes** (on page 35).
  - If users continue to fail to be provisioned after you have determined that they are assigned to the correct organization or have been assigned provisions that do not exist for a company, submit a Service Request in My Oracle Support (MOS).
-

---

## Saving Users to the Cloud

After users have been added to the table with their user information and provisioning assignments, you can save them to the cloud. Users that are saved to the cloud can access their provisioning assignments.

To save users:

- 1) Click **Save**.

---

**Note:** Enable the Save button by provisioning a user or adding a new user to the table.

---

## Deleting Users from the Table

You can only delete users if they have not been saved to the cloud.

To delete one user:

- 1) Select a user account.
- 2) Click **⚙ Actions**.
- 3) Select **Delete Row**.
- 4) Click **Yes**.

To delete two or more users:

- 1) Select the check boxes of the users whom you want to delete.
- 2) Click **⚙ Actions**.
- 3) Select **Delete Rows**.
- 4) Click **Yes**.

## Using Cancel

The Cancel button resets all of the progress that you have made in the table that has not been uploaded to Oracle Identity Manager during your current session.

For example, if you start a new session in Primavera Cloud Administration, add 50 new users to the table, and then cancel your actions, all of the progress that you made in the table will be reset and the table will be empty. However, if you start a new session in Primavera Cloud Administration, add 50 new users and then save them, add 10 more users to the table, and then cancel your actions, the 10 users that you added to the table after you have saved the 50 users to the cloud will be removed from the table.

To cancel your progress:

- 1) Click **Cancel**.

---

**Note:** The **Cancel** button becomes enabled after you edit the table for the first time.

---

- 2) Click **Yes**.

## Unlocking User Accounts

When user accounts become locked, users will be unable to log in to any of their applications until an administrator unlocks them.

The most common reasons why users become locked out of their accounts are that they attempt to log in with an incorrect password too many times or they do not reset their password and let it expire.

---

**Note:** Users who let their password expire can unlock themselves by attempting to log in to their account with their expired password.

---

To unlock user accounts:

- 1) Use the check box in the header row to deselect all users.
- 2) Click the **Locked** filter.
- 3) Navigate to the users that you want to unlock.
- 4) Select the checkboxes of the users.
- 5) Click **Unlock**.

---

**Notes:**

- The **Unlock** button appears when you select at least one checkbox.
  - If you select the accounts of locked and unlocked users at the same time, then the **Unlock** button will not appear.
  - For a demonstration on how to unlock user accounts, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Unlocking Users**.
-



---

## Resetting User Passwords

You can reset user passwords using Primavera Cloud Administration. When a user password is reset, an email will be sent to the user with a temporary password. Upon using a temporary password to log in with Oracle Access Manager, users are required to update their passwords.

After you create new users for your cloud service, you must reset those users' passwords in order to notify them of their account and to supply them with a temporary login password. When users log in to an application for the first time using their temporary password, they must set their challenge questions in addition to updating their passwords.

To reset user passwords:

- 1) Use the check box in the header row to deselect all users.
- 2) Select the check boxes that are associated with the users whose passwords you want to reset. Alternatively, you can select all available users by selecting the check box next to the First Name column header.

---

**Note:** There is no confirmation message for resetting passwords. Ensure that you want to reset the passwords of all of the selected users.

---

- 3) Click **Reset Password**.

## Enabling User Accounts

When you enable user accounts, you let the users that are associated with those accounts to access their applications. Users that have been enabled will no longer appear in the **Disabled** filter.

To disable a user account:

- 1) Use the check box in the header row to deselect all users.
- 2) Click the **Disabled** filter.
- 3) Navigate to the users that you want to enable.
- 4) Select the check boxes of the users.
- 5) Click **Enable**.

---

**Notes:**

- The **Enable** button appears when you select the check box of a disabled user account.
  - If you select an enabled user account while you have disabled user accounts selected, the **Enable** button will not appear.
-

## Disabling User Accounts

When you disable user accounts, the users that are associated with those accounts will not be able to be authenticated during log in and they will be unable to access their applications.

Users that are disabled will appear in the **Disabled** filter and will have the

To disable a user account:

- 1) Use the check box in the header row to deselect all users.
- 2) Navigate to the users that you want to disable.
- 3) Select the check boxes of the users.

---

**Note:** There is no confirmation message for disabling users. Ensure that you want to disable all of the selected users.

---

- 4) Click **Disable**.

---

### Notes:

- The **Disable** button appears when you select the check box of an enabled user account.
  - If you select a disabled user account while you have enabled user accounts selected, then the **Disable** button will not appear.
  - For a demonstration on how to disable users, go to *5 Minutes with Oracle Primavera Cloud - Managing Users with the Administration Application 15.2* at <https://www.youtube.com/watch?v=op8VpaCSmgU&feature=youtu.be>, click **Show More** in the description, and then click **Disabling Users**.
-

## Advanced Identity Management Tasks

The information in this section is specific to the Oracle Identity Manager application. Use this section if you need to do one of the following tasks:

- ▶ Modify user information
- ▶ Reset challenge questions

---

**Note:** The system takes an additional five minutes to process actions in Oracle Identity Manager once they have been completed. For example, if you unlock a user's account and they attempt to log in to their account before waiting five minutes, they can lock their account again.

---

To log into Oracle Identity Manager:

- 1) Log in with Oracle Access Manager.
- 2) In the **Primavera Cloud Portal**, under **Oracle Fusion Middleware**, click **Oracle Identity Manager**.

## Editing a User's Attributes

To edit a user's attributes:

- 1) Login to OIM as an administrator.
- 2) In Identity Self Service, under Administration, click **Users**.
- 3) Search for the user whose attributes you want to modify.
- 4) Select the user in the search results table.
- 5) Modify the user with one of the following ways:
  - ▶ Click **Edit** on the toolbar.
  - ▶ Select **Edit** from the Actions menu.
  - ▶ Click the user login of the user record that you want to edit and then click **Modify User** on the toolbar of the User Details page.
- 6) In the Modify User page, change the values of the attributes that you want to edit.
- 7) Click **Submit**.

---

**Note:** Changing a user's Organization or User Login can result in provisioning errors that will prevent the user from accessing their account. Oracle recommends that you do not change a user's User Login or Organization.

---

The following list includes the name of the fields in the sections that appear on the Modify User page as well as a description for each field:

Justification and Effective Date

- ▶ **Justification:** Justification for creating the user.
- ▶ **Effective Date:** Date on which the user must be created.

Basic User Information

- ▶ **First Name:** First name of the user.
- ▶ **Middle Name:** Middle name of the user.
- ▶ **Last Name:** Last name of the user.
- ▶ **Email:** Email address of the user.
- ▶ **Manager:** The reporting manager of the user.
- ▶ **Organization:** The organization to which the user belongs. This is also known as the home organization.
- ▶ **User Type:** The type of employee, such as consultant, contractor, contingent worker, employee, full-time employee, intern, non-worker, other, part-time employee, or temporary.
- ▶ **Display Name:** It can have localized values, which can be added by clicking Manage Localizations, and selecting from a list of languages. Display Name is available in 33 languages.

#### Account Settings

- ▶ **User Login:** The user name to be specified for logging in to the Administration Console.
- ▶ **Password:** The password to be specified for logging in to the Administration console.
- ▶ **Confirm Password:** Re-enter the password to be specified for logging in to the Administration console.

#### Account Effective Dates

- ▶ **Start Date:** The date when the user will be activated in the system.
- ▶ **End Date:** The date when the user will be deactivated in the system.

#### Provisioning Dates

- ▶ **Provisioning Date:** Date when user is provisioned into the system.
- ▶ **Deprovisioning Date:** Date when the user is deprovisioned from the system.

#### Contact Information

- ▶ **Telephone Number:** The telephone number of the user.
- ▶ **Home Phone:** The telephone number of the user's residence.
- ▶ **Home Postal Address:** The postal address of the user's residence.
- ▶ **Fax:** The fax number of the user.
- ▶ **Mobile:** The mobile number of the user.
- ▶ **Pager:** The pager number of the user.
- ▶ **Postal Address:** The postal address of the user.
- ▶ **Postal Code:** The postal code number of the user's address.
- ▶ **PO Box:** The post box number of the user's address.
- ▶ **State:** The state name of the user.
- ▶ **Street:** The street name where the user resides.
- ▶ **Country:** The country where user resides.
- ▶ **Locale:** The locale code of the user.

#### Other Attributes

- ▶ **Timezone:** The timezone of the user.
- ▶ **Common Name:** The common name of the user.

- ▶ **Department Number:** The department number of the user.
- ▶ **Employee Number:** The employee number of the user.
- ▶ **Generation Qualifier:** Whether the user qualifies the generation.
- ▶ **Hire Date:** The hiring date of the user.
- ▶ **Locality Name:** The name of the locality where user resides.
- ▶ **Initials:** The initials of the user.
- ▶ **Title:** The title for the user.

## Resetting Challenge Questions

Users can log in to Oracle Identity Manager (OIM) to update or change their challenge questions.

To change your challenge questions:

- 1) Log in to OIM with your username and password.
- 2) In Identity Self Service, under My Profile, click **My Information**.
- 3) In the My Information page, expand **Challenge Questions**.
  - a. In the Question menus, select your challenge questions.
  - b. In the **Answer** fields, enter an answer for each question.
- 4) Click **Apply**.

## Changing a Password

Any user can log in to Oracle Identity Manager (OIM) to change their password.

Unless otherwise specified, passwords must adhere to the following default password policy:

A password can contain the following character types as long as it has met the minimum character requirements:

- ▶ English Uppercase Characters (A-Z)
- ▶ English Lowercase Characters (a-z)
- ▶ Base 10 Digits (0-9)
- ▶ Non-alphanumeric Characters (for example, !, \$, #, or ^)
- ▶ Unicode Characters

The minimum password character requirements require a minimum of eight characters that include at least:

- ▶ Two alphabet characters
  - ▶ One Numeric Character
  - ▶ One Alphanumeric Character
  - ▶ One English Uppercase Character (A-Z)
  - ▶ One English Lowercase Character (a-z)
- ▶ One Base 10 Digit (0-9)

A password cannot contain a user's First Name, Last Name, or User ID.

A password expires after 180 days. A warning will be sent to a user 30 days before the expiration date to remind them to change their password.

To change your password:

- 1) Log in to OIM with your username and password.
- 2) In Identity Self Service, under **My Profile**, click **My Information**.
- 3) In the My Information page, expand **Change Password**.
- 4) In the **Old Password** field, enter the password that is currently associated with your login username.
- 5) In the **New Password** field, enter the new password that you want associated with your login username.
- 6) In the **Confirm New Password** field, enter the password that you entered in the New Password field.
- 7) Click **Apply**.

---

**Note:** Wait five minutes before logging into an account after you have reset your password.

---

## Removing User Accounts

In the Accounts tab of the User Details page, you can remove accounts from a user.

To remove accounts from a user:

- 1) Log in to OIM as an administrator.
- 2) In Identity Self Service, under Administration, click **Users**.
- 3) Search for the user from whom you want to remove a role and then click that user's login name.
- 4) Open the Accounts tab.
- 5) Search for the account or accounts that you want to remove from the user.
- 6) From the Actions menu, select **Remove**. Alternatively, you can click **Remove Accounts** from the toolbar.
- 7) In the Catalog tab, select one or more roles.
  - ▶ If you select one account, click **Add to Cart**.
  - ▶ If you select more two or more accounts, click **Add Selected to Cart**.
- 8) (Optional) To remove one or more accounts from your cart:
  - a. Click **Edit**.
  - b. In the Request Cart dialog box, do one of the following:
    - Click **Remove** to remove a single account.
    - Click **Remove All** to remove all of the accounts in your cart.
  - c. If you want to continue to choose the accounts that you want to remove, close the Request Cart dialog box.
- 9) Click **Checkout**.
- 10) Click **Submit**.

## Creating Partner Companies and Partner Users

### Prerequisites

- ▶ The Customer has a "partner admin" user login in order to be able to create partner companies.
- ▶ The username and password have been included in the Welcome letter sent to new Customers.
- ▶ Customers have active Company Admin Login.

---

**Note:** If you have not received a partner username and password, you can submit a Service Request in My Oracle Support.

---

## Creating a Partner Company

You must create the partner company in Unifier and a matching organization in OIM, starting with Unifier. The OIM organization should match the partner company short name in Unifier.


To create a partner company in the cloud:

- 1) Create a partner Company.
  - a. Log in to the Unifier with **PARTNERADMIN** user credentials.
  - b. Click **Companies**.
  - c. Click **New**.
  - d. Enter details in **General** and **Address** tabs.
  - e. For Status, select **Active** in the **General** tab.
  - f. Click **Apply** to create a new partner Company.
- 2) Add the partner Company to a base Company.
  - a. Select the appropriate base Company.
  - b. Click **Open**.
  - c. From the left Navigator, click **Partner Companies**.
  - d. From the log, click **Add** to open the Add Partner Companies window.
  - e. Select the partner Company and click **Add Member**.
- 3) Associate the new partner Company with the base Company.
  - a. Log in to Unifier as **Company Administrator**.
  - b. Click the **Company Workspace** tab.
  - c. Switch to Administration Mode (**Admin Mode**).
  - d. From the left Navigator, click **Partner Companies**.
  - e. From the log (right-hand pane), click **Add** to open the Add Partner Companies window.
  - f. Select the partner Company and click **Add Member**.
- 4) Add the new partner organization to OIM.
  - a. Log in to **Oracle Identity Self Service** as an administrator.
  - b. In **Identity Self Service**, under **Administration**, click **Organizations**.
  - c. Click **Create** and then complete the following in the **Create Organization** tab:
    1. In the **Organizational Name** field, enter a name.

---

**Note:** Ensure that the **Organization Name** field contains the same value as the one you entered in the **Short Name** field in Unifier (General tab). See *Creating a Partner User* (on page 41).

---

2. In the **Type** drop-down list, select **Company**.
3. Click  **Search** and then complete the following:
  - a. Click **Search**.
  - b. Select the organization under which other partner organizations exist.



---

**Caution:** Setting a parent organization to **Top** can prevent you from creating that organization and can result in unexpected errors

---

- c. Click **Select**.
- d. Click **Save**.

The new partner Company has now been created in both Unifier and OIM.

## Creating a Partner User

You must create the partner company in both Oracle Identity Manager and Primavera Unifier, starting with Primavera Cloud Administration.

To create a partner User in OIM:

- 1) Create a new user account.
  - For procedures to create individual user accounts, see *Creating a User with the Table* (on page 22).
  - For procedures to bulk import user accounts, see *Creating a Custom Import Template* (on page 23).
- 2) Provision the new user with the necessary account and roles for Primavera Unifier. For information about provisioning users, see *About Provisions* (on page 25) and *Managing the Provisions of One User* (on page 27).
- 3) Add the partner user to Unifier.
  - a. Login to Unifier as a company administrator.
  - b. Click the **Company Workspace** tab.
  - c. Switch to Administration Mode (**Admin Mode**).
  - d. From the left Navigator, open **User Administration** and then click **Partner Users**.
  - e. From the log (right-hand pane), click **Partner Users** to open the User/Group Picker window.
  - f. From the List Names From drop-down list, select the new partner Company that you have created.
  - g. Select the partner user and click **Add**.
  - h. Click **OK** to close the window.

The new partner User appears in the Partner Users log and is now added to the partner Company as one of the partner Users.

## Actions that Require Service Requests

In order to complete the following actions, submit a Service Request in My Oracle Support:

- ▶ Changing the default password policy to match your corporate password policy.
- ▶ Modifying the automatically-generated email notification that is sent to users when their account is provisioned or their password is reset.
- ▶ Changing the Authorization Codes in an application.

---

**Note:** If you change the Authorization Code in your application and do not submit a Service Request in My Oracle Support, you will experience provisioning errors.

---

- ▶ Changing PARTNER license counts and allocations.

## Enabling Identity Federation with Oracle Primavera

Identity federation enables companies to provide services and share identity information across their respective security domains. The end user does not need to log in again to access a remote entity where business is conducted. Users authenticate at their local sites, and the federation mechanism enables this information to be shared with their Primavera Cloud Service.

The benefits of implementing identity federation for your cloud service include:

- ▶ Users do not need to supply login credentials to access each entity where business is conducted. This also eliminates the need to remember and manage multiple logins/passwords. Users still need accounts at the sites so that the accounts can be linked.
- ▶ Local password management (for example, resetting passwords and creating password policies)

For more information about enabling identity federation for your cloud service, refer to *Enabling Federated Identity Single Sign-On (SSO) Through SAML 2.0 For Primavera Products Hosted In Oracle Cloud (Doc ID 2087067.1)* at My Oracle Support.

## Oracle Primavera Prime Setup Tasks

---

There are no additional setup tasks that you need to complete before you begin to use Oracle Primavera Prime. For more information about using Oracle Primavera Prime, refer to the following sections of the Oracle Primavera Prime product library at <http://www.oracle.com/technetwork/documentation/default-2172536.html>.

- ▶ Administration (except for the *System Administrator's Post Installation Guide*)
- ▶ User Guides
- ▶ Help
- ▶ Integration Documentation

## Primavera Unifier Setup Tasks

---

There are no additional setup tasks that you need to complete before you can begin to use Primavera Unifier. For more information about using Primavera Unifier, refer to the following sections of the Primavera Unifier product library at <http://www.oracle.com/technetwork/documentation/default-1870233.html>

- ▶ User Documentation
- ▶ Database Documentation
- ▶ Integration Documentation

## P6 EPPM Setup Tasks

---

In this chapter you will find information about all of the P6 EPPM applications and the necessary tasks that you should complete to setup each application before users should begin to use each application. Also, you will find information on how to setup and configure on-premises instances of WebLogic for eventing and Primavera Risk Analysis for analyzing project risks.

After you have reviewed the content in this chapter and completed any necessary tasks, refer to the most recent P6 EPPM User Library on Oracle Technical Network at <http://www.oracle.com/technetwork/documentation/primavera-093289.html> for more information on how to configure user accounts and security within the P6 EPPM applications and how to use the applications.

### In This Section

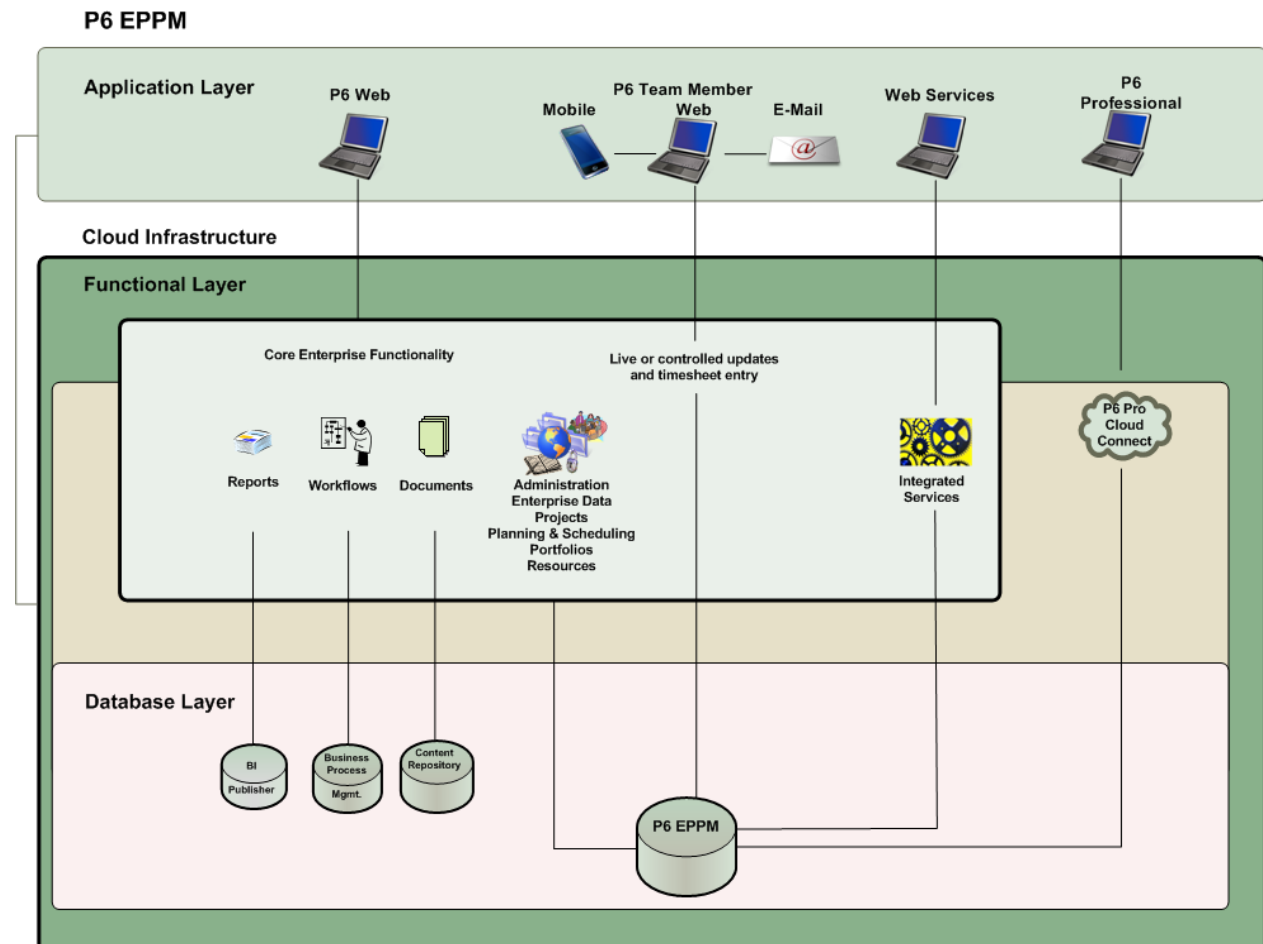
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## About P6 EPPM

Oracle Primavera P6 Enterprise Project Portfolio Management (P6 EPPM) is a robust and easy-to-use integrated solution for globally prioritizing, planning, managing, and executing projects, programs, and portfolios. It optimizes role-specific functionality to satisfy each team member's needs, responsibilities, and skills. It provides a single solution for managing projects of any size, adapts to various levels of complexity within a project, and intelligently scales to meet the needs of various roles, functions, or skill levels in your organization and on your project team.

Depending on your organization's specific deployment, P6 EPPM generally consists of the applications, functions, and databases depicted below.



Thousands of companies rely on P6 EPPM to:

- ▶ Plan, schedule, and manage the right strategic mix of projects
- ▶ Make informed project, cost, and resource management decisions
- ▶ Enhance team collaboration and workflow productivity
- ▶ Maximize each project contributor's skills and responsibilities
- ▶ Track progress and optimize capacity for maximum profitability
- ▶ Deliver programs and projects on time and within budget

- ▶ Share data with human capital, financial management, and enterprise resource planning systems

This deployment of P6 EPPM is hosted, deployed, and maintained by Oracle on the cloud; as a result, typical deployment and system administration tasks that system administrators were required to perform on premises deployments, such as creating databases, hosting servers, configuring supporting technologies, and integrating supported applications, are almost entirely facilitated by Oracle. P6 EPPM Applications on the Cloud

### **P6 EPPM Applications on the Cloud:**

The following applications are included with the deployment of P6 EPPM Cloud:

**P6:** Most users will rely almost exclusively on the P6, which is the primary interface for administering and managing projects.

**P6 mobile:** Allows team members to provide status on their tasks and to enter timesheets while working "on the go".

**P6 Team Member Web:** This web interface allows team members to provide status on their tasks and record time in timesheets.

**P6 Team Member E-mail Statusing Service:** This method allows team members to provide status on their tasks using any HTML or plain text e-mail application.

**P6 Professional for EPPM:** The P6 web application is the main interface for all project management functionality. You can also use the P6 Professional software to take advantage of its core project planning and scheduling functionality. The P6 Professional application and its features, including P6 Visualizer, run on Microsoft Windows. P6 Professional is also available for users who need to work on their projects in an offline mode. P6 Professional is available for P6 EPPM users working in a Cloud environment.

**P6 Professional Cloud Connect:** Connects P6 Professional to an EPPM Oracle database on the cloud. P6 Integration API (in remote mode) is installed by default. Using this, P6 EPPM users working on a WAN environment can achieve performance levels comparable to compression server installation. This is optional for on premises users.

**P6 EPPM Web Services:** P6 EPPM Web Services is an integration technology that extends P6 business objects and functionality. Based on open standards, including SOAP, XML and WSDL, P6 EPPM Web Services enables developers to leverage standard interfaces to create integrated software solutions that interoperate with a wide variety of enterprise software applications running on a diversity of hardware and operating system platforms.

**Oracle Identity Manager (OIM):** OIM is an enterprise identity management system that centrally administers user accounts and access privileges.

**BI Publisher:** BI Publisher gives you the ability to run and schedule reports in P6.

### **Optional Applications Delivered with P6 EPPM Cloud**

The following applications can be included as optional components of P6 EPPM Cloud.

**Primavera Gateway:** Primavera Gateway is a highly configurable application that integrates P6 EPPM with other products for increased risk and scope management.



**User Productivity Kit (UPK):** UPK is an application that can connect with P6 EPPM and allow users to create instructions (tutorials) to demonstrate how to perform certain tasks.

**Oracle Business Process Management (BPM):** BPM enables you to initiate and manage workflows.

**Oracle AutoVUE:** Oracle AutoVUE provides native document viewing, markup and real-time web-based collaborative capabilities when integrated with WebCenter Content.

**Oracle WebCenter Content Core Capabilities (WCCC):** WCCC uploads and stores documents to the WCCC database, categorizes documents within folders, enables version control for documents, and allows you to review documents.

### **Integrated Solutions**

P6 EPPM Cloud has the ability to integrate itself with other cloud applications. The following list represents all of the currently supported integrations:

P6 EPPM and Primavera Gateway

P6 EPPM and Analytics

P6 EPPM and Primavera Unifier

P6 EPPM and Oracle Primavera Prime



## P6 Setup Tasks

There are no additional setup tasks that you need to complete before you can begin to use P6. Refer to the *P6 EPPM Application Administrator's Guide* for more information about security, assigning privileges to users, and configuring settings. However, if you want to configure eventing for P6, refer to **Configuring Eventing For P6** (on page 51).

### In This Section

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## Configuring Eventing For P6

Events can be triggered by changes that take place in the P6 database. These events can be classified into two types of events:

- ▶ **Business object events:** Triggered when P6 is used to update or create objects in the P6 database.
- ▶ **Special operation events:** Triggered when a supported operation or job service is invoked.

When a change triggers an event, the P6 Event Notification system sends the event message to a your configured message queue. You could, for example, launch an external workflow based on the existence of a specific event.

---

**Note:** The content in this section details optional configuration for P6. You do not need to configure eventing for P6 in order to enable P6 for users to work in the application.

---

## Event Triggers

An event may be one of two types, a business object event or a special operation event.

- ▶ See Business Object Events for a list of business object events.
- ▶ See Special Operation Events for a list of special operation events.

### Changes that trigger events

With the exception of the Timesheet object, create and update changes made to supported objects using P6, P6 EPPM Web Services, or the P6 Integration API will trigger an event. When a status change is made to a Timesheet object using P6, a TimesheetUpdated event will be triggered.

### Changes that do not trigger events

The following create and update changes do not trigger events:

- ▶ Create and update changes made to objects that do not support events
- ▶ Create and update changes made to objects that support events but are not configured to send events
- ▶ Changes made in P6 Professional

---

Additionally, an event is triggered when you run either the Apply Actuals or Summarize Job service from P6 Professional. Receiving either of these events depends on administrative settings and requires that P6, P6 EPPM Web Services, or the P6 Integration API is running on the same database as P6 Professional.

---

---

## About the Event Messages

P6 sends the event messages to the the JMS queue in an xml format.

---

### Sample Business Object Event Message

Sample ActivityCreated Messsage: When an activity is created, the system sends an ActivityCreated message similar to the following message:

```
<?xml version="1.0" encoding="UTF-8"?>
<MessagingObjects xmlns="http://xmlns.oracle.com/Primavera/P6/V8.2/Common/Event"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <ActivityCreated>
    <Id>Auto-1</Id>
    <ObjectId>125500</ObjectId>
    <ProjectObjectId>11840</ProjectObjectId>
    <WBSObjectId>36320</WBSObjectId>
  </ActivityCreated>
</MessagingObjects>
```

Sample ActivityUpdated Message: When an activity is updated, the system sends an ActivityUpdated message similar to the following message:

```
<?xml version="1.0" encoding="UTF-8"?>
<MessagingObjects xmlns="http://xmlns.oracle.com/Primavera/P6/V8.2/Common/Event"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <ActivityUpdated>
    <Id>Auto-1</Id>
    <Name>t2</Name>
    <ObjectId>125500</ObjectId>
    <ProjectObjectId>11840</ProjectObjectId>
    <WBSObjectId>36320</WBSObjectId>
    <NewValues>
      <Name>t2</Name>
    </NewValues>
    <OldValues>
      <Name>Auto-1</Name>
    </OldValues>
  </ActivityUpdated>
</MessagingObjects>
```

### Validating Event Notification with Oracle

After you have successfully configured WebLogic for cross domain eventing and shared the relevant information with Oracle, you should test event notification to ensure event messages are sent when an event occurs.

To test event notification:

- 1) Open P6 and create a project.
- 2) In P6:
  - a. Add one or more activities to the project.
  - b. Summarize the project to test if an event is generated.
- 3) Launch the WebLogic **Administration Console** to verify that the event is generated and sent to the queue.
- 4) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Modules** in the **Domain Structure** pane.
- 5) On the **JMS Modules** page, click the module you created for the remote server.
- 6) On the **Settings** page for the module, click the queue you created for the remote server.
- 7) On the **Settings** page for the queue, click the **Monitoring** tab.
- 8) On the **Monitoring** tab, select the option for the remote server destination you created and click **Show Messages**. The event message should be visible in the **JMS Messages** list.

---

## Configuring Your Environment to Support Event Notification

### Prerequisites to Receive P6 Events

#### Configuring WebLogic JMS Servers to Receive P6 Events

You will need to install and configure WebLogic to receive P6 events as JMS messages from your Oracle Primavera cloud deployment. For supported versions, see *Tested Configurations*. For more information about how to install WebLogic, see the following URL:

<http://www.oracle.com/technetwork/middleware/weblogic/documentation/index.html>

---

**Note:** If you are using WebLogic 11g (10.3.6), you must download and apply the following patches from My Oracle Support:

- 9923849
- 20181997

For information on how to apply your WebLogic patches, see the readme that is located in the respective patch zip file.

---

After you have installed WebLogic, you must configure your administration server, managed servers, and clusters.

#### Sharing Configuration Information between Domains

To enable cross domain eventing, the following information must be shared with Oracle:

- ▶ DNS URL
- ▶ JMS queue name
- ▶ JMS connection factory name
- ▶ JNDI connection factory name
- ▶ JMS module security credentials
- ▶ Weblogic domain server credentials that establish trust with the Oracle <0P\_ProdName\_P6\_Web cloud environment
- ▶ Username and password of the WebLogic domain administrator to connect the JMS servers from the Oracle <0P\_ProdName\_P6\_Web cloud environment

#### Configuring your Environment

If you would like to receive notification when events occur, you must configure the JMS message queue to receive P6 events.

To configure your environment to support notification:

- 1) Configure the WebLogic message queue:
  - a. Target the JMS server to a migratable target. See ***Targeting the JMS Server to a Migratable Target***. (on page 57)
  - b. Configure the WebLogic message queue. See ***Configuring the WebLogic Message Queue*** (on page 58).

### Configuring Cross-Domain WebLogic Credentials

- 1) Log in to the WebLogic Administration Console with the following URL:  
`http://<host_name>:<port>/console`
- 2) In the **Change Center** pane, click **Lock & Edit**.
- 3) In the **Domain Structures** pane, click the name of the domain.
- 4) Open the **Security** tab and then open the General tab.
- 5) Expand **Advanced**.
- 6) In the **Credential** field, enter a password for the domain.

---

**Notes:** By default, when a domain is created, a unique credential is generated for the domain. Creating a unique credential and sharing it with other domains establishes trust between those domains.

---

- 7) In the **Confirm Credential** field, enter the password that you entered in the **Credential** field.
- 8) Click **Save**.
- 9) Click **Activate Changes**.
- 10) Restart the Weblogic administration server and all managed servers.



### Targeting the JMS Server to a Migratable Target.

JMS-related services are hosted on individual server instances within a cluster and for these services, the WebLogic Server migration framework supports failure recovery with service migration, as opposed to failover. In a clustered server environment, a recommended best practice is to target the JMS server to a migratable target, so that a member server will not be a single point of failure. Therefore, the following prerequisite instruction is required if configuring The WebLogic Message Queue In A Cluster.

---

**Note:** The instruction below assumes the WebLogic domain being configured has managed servers already created and assigned to a cluster parameter.

---

- 1) Configure the cluster migration Basis to Consensus:
  - a. Login into the WebLogic Administration console.
  - b. In the Change Center of the Administration Console, click **Lock & Edit**.
  - c. Navigate to the following location under the Domain Structure:
  - d. **Environment -> Clusters -> ClusterName -> Migration**.
  - e. Locate the **Migration Basis** drop-down list and change its value to **Consensus**.
  - f. Select **Save**.
  - g. Select **Active Changes**.
- 2) Configure a migratable target for one of the managed servers in the cluster:
  - a. In the Change Center of the Administration Console, click **Lock & Edit**.
  - b. In the **Domain Structure** tree, expand **Environment**, then select **Migratable Targets**.
  - c. On the Summary of Migratable Targets page, select the link for one of the managed servers in the list.
  - d. Select the migration tab:
  - e. In Service Migration Policy, select the **Auto-Migrate Exactly-Once Services** migration policy.
  - f. In **Constrained Candidate Servers**, move the user-preferred server and the additional managed servers in the cluster you want to support failure recovery from the **Available** column to the **Chosen** column.
  - g. Select **Save**.
  - h. In the Change Center of the Administration Console, click **Active Changes**.
  - i. Restart the Admin server and the managed servers in the cluster for changes to take effect.

## Configuring the WebLogic Message Queue

When an event is triggered, the P6 Event Notification system sends the event message to a message queue. To receive these notifications, you must first configure the message queue.

To set up the WebLogic JMS message queue:

- 1) In either a new or existing WebLogic domain, launch the WebLogic **Administration Console** if it is not already open.
- 2) In the WebLogic **Administration Console**:
  - a. Create a new JMS server and persistence store. See ***Creating a JMS Server and Persistence Store*** (on page 59).
  - b. Create a JMS module. See ***Creating a JMS Module*** (on page 60).
  - c. Create a new connection factory. See ***Creating a JMS Connection Factory*** (on page 61).
  - d. Create a new queue or topic. See ***Creating a JMS Message Queue and Subdeployment*** (on page 62) to see how to create a new queue.

---

**Note:** Create a queue to deliver a message to a specific group of users.  
Create a topic to distribute a message amongst several users.

---

## Creating a JMS Server and Persistence Store

Create a JMS server to hold queues and topics.

To create a JMS server and persistence store:

- 1) If it is not already open, launch the WebLogic **Administration Console** on the remote or local server.
- 2) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Servers** in the **Domain Structure** pane.
- 3) On the **Summary of JMS Servers** page, click **New**.
- 4) On the **Create a New JMS Server** page:
  - a. Under **JMS Server Properties**:
    1. Enter a name in the **Name** field.
    2. Click **Create a New Store**.
  - b. Under **Select a store type**, select **File Store** from the **Type** list and click **Next**.
  - c. Under **File Store Properties**:
    1. Enter a name in the **Name** field.
    2. Select a server instance from the **Target** list.

---

**Note:** If you are configuring the WebLogic Message Queue in a cluster, select the migratable target you configured earlier.

---

3. Specify a location for the file store in the **Directory** field.

---

  - This location must already exist on your computer and you must have read/write rights to this folder. No error messages appear on the WebLogic console if the filestore is not configured correctly.

---
4. Click **OK**.
- d. Under **JMS Server Properties**, select the new store from the **Persistent Store** list and click **Next**.
- e. Under **Select Targets**:
  - If you are deploying to a standalone server, select the administration server (e.g., AdminServer) as the target from the **Target** list and click **Finish**.
  - If you are deploying to a cluster, select the migratable target configured earlier.

## Creating a JMS Module

Create a JMS module to manage and configure resources.

To create a JMS module:

- 1) If it is not already open, launch the WebLogic **Administration Console** on the remote or local server.
- 2) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Modules** in the **Domain Structure** pane.
- 3) On the **JMS Modules** page, click **New**.
- 4) On the **Create JMS System Module** page:
  - a. Under **The following properties will be used to identify your new module**, enter a name in the **Name** field and click **Next**.
  - b. Under **The following properties will be used to target your new JMS system module**, select a target server in the **Servers** box and click **Next**.

---

**Note:** If you are deploying to a cluster, select the cluster from the targets list.

---

- c. Under **Add resources to this JMS system module**, select the **Would you like to add resources to this JMS system module** option and click **Finish**.

## Creating a JMS Connection Factory

Create a connection factory to enable connections between your JMS elements.

To create a JMS connection factory:

- 1) If it is not already open, launch the WebLogic **Administration Console**.
- 2) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Modules** in the **Domain Structure** pane.
- 3) On the **JMS Modules** page, select the module to which you want to add the connection factory.
- 4) On the **Settings** page, click the **Configuration** tab and under **Summary of Resources** click **New**.
- 5) On the **Create a New JMS System Module Resource** page:
  - a. Under **Choose the type of resource you want to create**, select the **Connection Factory** option and click **Next**.
  - b. Under **Connection Factory Properties**:
    1. Enter a name for the connection factory in the **Name** field.
    2. Enter a name in the **JNDI** field.
    3. Click **Next**.
  - c. Under **The following properties will be used to target your new JMS system module resource**, ensure the correct server is targeted and click **Finish**.

---

**Note:** If you are deploying to a cluster, the cluster should be selected as the target.

---

## Creating a JMS Message Queue and Subdeployment

Create a message queue to act as a receptacle for event messages sent from P6.

To create a JMS message queue and subdeployment:

- 1) If it is not already open, launch the WebLogic **Administration Console**.
- 2) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Modules** in the **Domain Structure** pane.
- 3) On the **JMS Modules** page, select the module to which you want to add the queue.
- 4) On the **Settings** page, click the **Configuration** tab.
- 5) On the **Configuration** tab under **Summary of Resources**, click **New**.
- 6) On the **Create a New JMS System Module Resource** page:
  - a. Under **Choose the type of resource you want to create**, select the **Queue** option and click **Next**.
  - b. Under **JMS Destination Properties**:
    1. Enter a name for the queue in the **Name** field.
    2. Enter a name in the **JNDI** field.
    3. Click **Next**.
  - c. Under **The following properties will be used to target your new JMS system module resource**, click **Create a New Subdeployment**.
- 7) On the **Create a New Subdeployment** page, enter a name in the **Subdeployment Name** field and click **OK**.
- 8) On the **Create a New JMS System Module Resource** page:
  - a. Select the new subdeployment from the **Subdeployments** list.
  - b. Select the JMS server you created when creating the Persistence Store as the target from the **JMS Servers** box.
  - c. Click **Finish**.

### Validating Event Notification with Oracle

After you have successfully configured WebLogic for cross domain eventing and shared the relevant information with Oracle, you should test event notification to ensure event messages are sent when an event occurs.

To test event notification:

- 1) Open P6 and create a project.
- 2) In P6:
  - a. Add one or more activities to the project.
  - b. Summarize the project to test if an event is generated.
- 3) Launch the WebLogic **Administration Console** to verify that the event is generated and sent to the queue.
- 4) In the WebLogic **Administration Console**, expand **Services/Messaging** and click **JMS Modules** in the **Domain Structure** pane.
- 5) On the **JMS Modules** page, click the module you created for the remote server.
- 6) On the **Settings** page for the module, click the queue you created for the remote server.
- 7) On the **Settings** page for the queue, click the **Monitoring** tab.
- 8) On the **Monitoring** tab, select the option for the remote server destination you created and click **Show Messages**. The event message should be visible in the **JMS Messages** list.





## P6 Team Member Setup Tasks

This chapter covers the tasks for P6 mobile and E-mail Statusing Service.

### In This Section

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### About P6 Team Member

The P6 Team Member is designed for individual contributors, or team members, to record their statuses and report their time using timesheets. Team members can also use E-mail Statusing Service and P6 mobile to status their tasks. P6 mobile allows access to P6 Team Member Web functionality. P6 Team Member Web, E-mail Statusing Service and the P6 mobile apps provide quick, convenient, and easy access to assigned tasks using the platform or device that accommodates your line of work.

Your project manager uses P6 to create and update the project schedule and task list. Depending on the project preferences the manager selected when creating the project in P6, the updates you make in the P6 Team Member Web, E-mail Statusing Service or P6 mobile will either apply immediately or require approval before they are applied to the project.

Work assignments in P6 Team Member are based on work distribution filters, or a team member being named as a resource assignment or an activity owner. As a team member, the P6 Team Member interfaces and the P6 mobile apps enable you to:

- ▶ View only your assigned tasks.
- ▶ Provide status on your tasks. The project manager customizes the status fields in your view. These fields can include time spent, time left, % complete, remaining duration, start date, and finish date.

Timesheets enable project team members to use the web to communicate timesheets and activity statuses directly to their organization's database, regardless of their location. This ensures that project managers are always working with the most up-to-date project information, making it easier to plan resources or resolve conflicts.

## **P6 Team Member Web**

You can use P6 Team Member Web to:

- ▶ Modify your view to display your task list by project and by current status, including Active, Due, Overdue, Starred, or Completed. You can refine your task list even further by filtering on the basis of specific parameters, entering a term by which to filter, or providing a sort order for your list.
- ▶ Mark a task with a star to signify its importance to you. You can view all your starred tasks in one list when you select the Starred task list view in the app menu.
- ▶ View a list of all your steps for a task. Add, edit, or delete steps to more accurately reflect your work, if you are given the privileges by your project manager. You can enter the % complete to show progress and mark a step as complete when you finish a step.
- ▶ View the codes and UDFs associated with a task for additional information about the task. Update codes and UDFs if your project manager requires you to update task status using these fields.
- ▶ View predecessor and successor tasks related to a task and contact resources associated with related tasks.
- ▶ Communicate with the project manager or other team members through e-mail.
- ▶ Communicate with the project manager about a task by viewing and posting messages in the Discussion dialog box. All messages are saved with the selected task.
- ▶ View and edit notebook topics associated with a task to see or provide more information about the task.
- ▶ View documents associated with a task and contact resources associated with project documents.
- ▶ Enter up-to-the-minute information about your assignments and to record the time you spent working on each one, by submitting timesheets. Timesheets helps you to focus on the work at hand with a simple cross-project to-do list of your upcoming assignments.

## **E-mail Statusing Service**

You can use E-mail Statusing Service to:

- ▶ Request a list of your current tasks through e-mail using the e-mail account associated with your P6 user account. You can request a filtered list of tasks by project; time frame; current status, including Active, Due, Overdue, Completed, or Starting; or by all the tasks that you starred.
- ▶ Reply to the e-mail you receive with your task list, record your progress, and send your updates.

Project managers can use E-mail Statusing Service to:

- ▶ Send a Welcome e-mail to new E-mail Statusing Service users, which includes the e-mail address to the E-mail Statusing Service, and instructions for requesting a task list and updating the list through e-mail.
- ▶ Send team members an e-mail request for status updates. Project managers can customize the task list sent to team members using the available filter options. Team members can provide status by replying to the e-mail with their updates.

## Configuring the Default Language of the P6 Team Member Web User Interface

The default language of the user interface is English.

To change the default language of your application's user interface:

- 1) Enter the URL for the application in your browser.
- 2) At the end of the URL, enter: `?locale=<locale_code>`

The locale codes are as follows:

- Brazilian Portuguese = pt\_BR
- French = fr
- German = de
- Italian = it
- Japanese = ja
- Korean = ko
- Russian = ru
- Spanish = es
- Simplified Chinese = zh\_CN
- Traditional Chinese = zh\_TW

For example, to change the language to German, the URL would be `http://yourserver/p6tmweb/?locale=de`.

---

**Note:** The users will need to know their SSO username and password.

---

### Tips:

Bookmark this URL for future access.

## Downloading P6 mobile Apps

To download the P6 mobile apps, do one of the following:

- ▶ If you are using an iOS device, go to the App Store to download the mobile application.
- ▶ If you are using an Android device, go to the Google Play App Store to download the mobile application.

## Configuring Login and Authentication Settings to Use P6 for iOS


Follow these steps to start the app for the first time. When you return to the app after working in other apps, the last page you were on will appear. Once you configure these settings, you won't need to perform these steps again unless your SSO cookies expire. If your cookies expire, you will need to enter your user name and password again.

---

**Note:** You may need to activate your device's VPN feature to access your company's deployment of P6. Contact your administrator for more information.

---

To start the app:

- 1) On your device's **Home** screen, tap  **P6**.
- 2) On the **Welcome to P6 Team Member** page, slide the **Single Sign On (SSO)** switch to **ON**.
- 3) Tap the **URL** field and enter the URL to your server (for example, `http://server.port/p6tmws`).
  - a. Tap **Authenticate**.
  - b. Enter your SSO username and password.
- 4) Tap **Sign In**.

## Tips

To access server information in the app—which includes the SSO setting, the URL to access the server, and your user name—navigate to the **app menu**, and then tap **Settings**.

- ▶ You can modify the settings for the app from the **Settings** page on your iPhone. See the *P6 Team Member User's Guide* for more information.

## Configuring Login and Authentication Settings to Use P6 for Android


Follow these steps to start the app for the first time. When you return to the app after working in other apps, the last page you were on will appear. Once you configure these settings, you won't need to perform these steps again unless your SSO cookies expire. If your cookies expire, you will need to enter your user name and password again.

---

**Note:** You may need to activate your device's VPN feature to access your company's deployment of P6. Contact your administrator for more information.

---

To start the app:

- 1) On your device's **Home** screen, tap  **P6**.
- 2) On the **Welcome to P6 Team Member** page, slide the **Single Sign On (SSO)** switch to **ON**.
- 3) Tap the **URL** field and enter the URL to your server (for example, `http://server.port/p6tmws`).
  - a. Tap **Authenticate**.
  - b. Enter your SSO username and password.
- 4) Tap **Sign In**.

### Tips

- ▶ To access server information in the app—which includes the SSO setting, the URL to access the server, and your user name—navigate to the **app menu**, and then tap **Settings**.
- ▶ You can modify the settings for the app from the **Settings** button in the app. See the *P6 Team Member User's Guide* for more information.

## Setting P6 to Support P6 mobile Users

For users to perform tasks in P6 for iOS or P6 for Android, you will need to:

- 1) Ensure the users you want to use the P6 mobile apps have a valid account in P6.

---

**Note:** Each user with a valid user account can be assigned to activities as a resource assignment if the account is associated with a labor resource, as an activity owner, or by being assigned a Team Member work distribution filter.

---

- 2) Assign users to at least one module access option.
- 3) Assign users to one or more activity assignments (or *tasks*) for at least one active project. P6 mobile apps will show tasks that have not yet started, active tasks, and tasks completed in the last 30 days.

---

**Note:** OBS access to a project is not required for resource assignments or activity owners using P6 Team Member Web, E-mail Statusing Service, or P6 mobile to view and update their assigned tasks. OBS access is required for each user with a Team Member work distribution filter assigned.

---

Have your P6 mobile app users download and install P6 for iOS from the Apple App Store or P6 for Android from the Google Play Store to their mobile device.

---

**Note:** Users will need to know the P6 server and their SSO username and password.

---

## Known Issues

- ▶ If users are in a time zone that observes daylight savings time, the hours displayed in their tasks may be incorrect by one hour.

## Setting P6 to Support E-mail Statusing Service Users

Projects may require that P6 users temporarily work in remote locations without access to the private network where the P6 server resides. Diverse project teams may also exist with some members updating their tasks using P6, and others using e-mail.

**Note:** Timesheet users can request a list of their tasks using E-mail Statusing Service; however, timesheet users can only update their tasks using P6 Team Member Web.

To support updating assignment status by e-mail, you will need to:

- 1) Ensure the users you want to use E-mail Statusing Service have a valid account in P6.

**Note:** Each user with a valid user account can be assigned to activities as a resource assignment if the account is associated with a labor resource, as an activity owner, or by being assigned a Team Member work distribution filter.

- 2) Assign users to at least one module access option.
- 3) Ensure the user's account specifies their unique e-mail address.
- 4) Assign users to one or more activity assignments (or *tasks*) for at least one active project. E-mail Statusing Service will show tasks that have not yet started, active tasks, and tasks completed in the last 30 days.

**Note:** OBS access to a project is not required for resource assignments or activity owners using P6 Team Member Web, E-mail Statusing Service, or P6 mobile to view and update their assigned tasks. OBS access is required for each user with a Team Member work distribution filter assigned.

- 5) Ensure your users download and install an e-mail client application or browser to access web mail.
- 6) Have your teams and managers plan their e-mail process. For example, consider details such as the timing of updates by e-mail versus updates made in P6 to avoid conflicts, network access hot spots, and what equipment or mobile devices you will be using.

### Known Issues

Yahoo and Hotmail web clients are not supported. If the user's e-mail address is assigned to one of these accounts, have them access their account within an SMTP e-mail client.

### Error Messages

Users may receive error messages when updating tasks if their e-mail application is set to return e-mail messages in HTML format.

One of the following situations will occur:

- ▶ An e-mail will be returned with the message "Date or unit format specified was invalid or missing."

- ▶ If there is an error in the Time Spent, Time Left, or Remaining Duration fields, an e-mail will be returned with a message that the updated value is incorrect because only part of the updated value was parsed by the E-mail Statusing Service.

The following methods can be used to avoid this issue:

- ▶ When entering task updates, delete the original value in its entirety before entering an updated value.
- ▶ Set the e-mail application to reply to messages in text format.
- ▶ Click the **Update this task** link to update tasks individually.

## P6 EPPM Web Services Setup Tasks

There are no additional setup tasks that you need to complete before you can begin to use P6 EPPM Web Services. Refer to the the *P6 EPPM Application Administrator's Guide* for more information about assigning module access rights to users for P6 EPPM Web Services.



## P6 Professional Setup Tasks

Depending on your company's P6 EPPM Cloud Service configuration, you will either use P6 Professional Cloud Connect or Primavera Global Desktop for P6 Professional.

### About ClickOnce

ClickOnce simplifies the deployment process for your P6 Professional applications while providing you with a secure runtime environment. ClickOnce is configured and provided to you by your Oracle support representative. It contains all of the information that you need to install or upgrade your P6 Professional client application and to enable P6 Professional Cloud Connect to communicate with your P6 EPPM cloud database.

In order to use P6 Professional with your Oracle Primavera cloud environment, you must install P6 Professional using ClickOnce from the the Primavera Cloud Portal. Instances of P6 Professional that have been installed using ClickOnce connect to the P6 EPPM database in the cloud using P6 Professional Cloud Connect. As patches and upgrades become available for your P6 Professional instance, you will be prompted to accept or decline the patch upon logging in to P6 Professional.

For more information about P6 Professional Cloud Connect, see *Using P6 Professional with P6 Professional Cloud Connect* (on page 75).

### ClickOnce Prerequisites

Ensure that you have required prerequisites before you attempt to run ClickOnce:

- ▶ A Windows operating system

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**Note:** ClickOnce is only supported for Windows operating systems.

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- ▶ Java Runtime Environment (JRE)
- ▶ .NET Framework

You must have administrator privileges on your computer to install some of the ClickOnce prerequisites. If you do not have the required version of .NET or JRE and do not have administrator privileges on your computer, then the ClickOnce installation will fail and you should contact your system administrator.

## Installing P6 Professional with ClickOnce

P6 Professional ClickOnce installation performs the following:

- Installs a supported version of .NET onto the computers of users who *either do not have .NET or have a version of .NET that is not supported for ClickOnce.*
  - *Installs a supported version of JRE onto the computers of users who either do not have a JRE or have a version of JRE that is not supported for ClickOnce.*
- 
- ▶ Installs and upgrades the P6 Professional client application software.
  - ▶ Configures the connectivity between the client software and the P6 Professional Cloud Connect server.

## Installation Scenarios

### Installing P6 Professional for the First Time

If you have never installed P6 Professional, click **Install** to begin the P6 Professional ClickOnce installation. ClickOnce will check and install any missing prerequisites before beginning installation.

### Upgrading P6 Professional with ClickOnce Installation

If you have installed P6 Professional with ClickOnce installation, you will be notified when a new version is available. Click **Install** to proceed with the upgrade.

## Working Offline

After you install or upgrade P6 Professional with ClickOnce, if you want to work offline (not connected to the P6 EPPM database) you can create a P6 Professional Standalone (SQLite) database, work on P6 Professional, and then upload the changes to the P6 Professional Cloud Connect database.

---

## Using P6 Professional with P6 Professional Cloud Connect

In high-latency environments, performance can be affected by the amount of data that needs to be transferred between P6 Professional and the P6 database on the cloud. To optimize the amount of data that flows between P6 Professional on your desktop and the P6 cloud server, ensure that you have a stable, wired connection to the P6 cloud server and follow the guidelines described in the sections below.

### Improving Login Performance

Login performance is affected by the amount of data that gets loaded during the login process. You can control this data by following the tips described below:

- ▶ Evaluate user privilege assignments to ensure that your users have access to only relevant data.
- ▶ Remove unused global objects from the system, including unused UDFs or Code assignments.
- ▶ Set the startup filters to load Current Projects Only Data and turn off loading for Resource Summary Data.

### Enabling the Welcome Dialog

Enable the **Welcome dialog** from **User Preferences** dialog box to select the project at application startup. Selecting a project at startup ensures that you do not automatically open a project during startup. If you do not select the Welcome dialog option and a project that you did not intend to open automatically opens, you would need to close the project and open another.

---

**Note:** You should only enable the Welcome dialog if you work on different projects.

---

To configure the Welcome dialog:

- 1) Log in to P6 Professional.
- 2) From the toolbar, select **Tools** and then click **User Preferences**.
- 3) In the **Application Startup Window** menu, under the **Application** tab, select **None**.
- 4) Select the **Show the Welcome dialog at startup** checkbox.
- 5) Exit the User Preferences dialog box.

## Creating and Selecting a Portfolio with Only the Required Projects

Oracle recommends that you do not use the All Projects portfolio because doing so will load all the projects in the database to which the user has access. Instead, you can either create a new portfolio with your required projects or you can open the No Projects portfolio when logging in to the application.

To create a new portfolio:

- 1) Login to P6 Professional.
- 2) From the toolbar, select **Enterprise** and then click **Project Portfolios**.
- 3) Click **Add** to create a new portfolio.
- 4) Add the required projects to the portfolio.
- 5) From the toolbar, select **File** and then click **Select Project Portfolio**.
- 6) Select the portfolio.

---

**Note:** Ensure that the **EPS bands only for projects in current portfolio** option is selected when opening a portfolio.

---

## Configuring Startup Options

To configure the startup options:

- 1) Log in to P6 Professional.
- 2) From the toolbar, select **Tools** and then click **User Preferences**.
- 3) Under the **Startup Filters** tab, deselect the **Resource Summary Data** checkbox.
- 4) Select the current project data; this only applies to for Resources, Roles, OBS, Activity Codes, and Cost Accounts.

## Improving Functional Performance

- ▶ When possible, use filters to reduce the amount of data that is loaded or displayed.
- ▶ P6 Professional commits data whenever a new row is added. If your network or internet connection is subject to high latency, it will take longer for the data to be committed. To reduce the time it takes for your data to be committed, create a local Excel file and then import then data using XLS import. Alternatively you can use a local SQL Lite database to enter the data and use XML export/import to move the data to the P6 EPPM database.
- ▶ For more information about SQL Lite and P6 Professional, refer to the *P6 Professional Installation and Configuration Guide (Standalone)* in the P6 Professional library on OTN.
- ▶ Import layouts separately from projects when doing XML import; this will allow the import to run in background.
- ▶ Use P6 Web to schedule recurring tasks like summarizer, apply actuals, scheduler, and so on, during off peak hours.
- ▶ Avoid scheduling projects frequently.
- ▶ Use the Refresh (F5) feature only when necessary, as doing so will force P6 Professional to reload data from the server.

---

## About P6 Professional with Primavera Virtual Desktop

Primavera Virtual Desktop enables you to run P6 Professional over a secure network connection.

The following sections contain information about the prerequisites that are required to run Primavera Virtual Desktop as well as behavior that differs from typical on-premises deployments of P6 Professional.

---

### Prerequisites to Use Primavera Global Desktop

Prior to accessing P6 Professional, users must have completed following prerequisites:

- ▶ Install a PDF viewer on your local computer. If you do not have a PDF viewer installed on your computer, you can get Adobe Reader at <https://get.adobe.com/reader/>.
- ▶ Assign users the **Primavera Virtual Desktop User** role and **P6 Account Instance** in Primavera Cloud Administration.
- ▶ Assign users P6 Professional module access rights in P6.
- ▶ Assign users project privilege rights in P6.

---

#### Notes:

- For more information about assigning module and project privilege rights in P6, see the *P6 EPPM Application Administrator's Guide*.
- For additional supported client configuration details, such as supported browsers and Java JRE, see [http://docs.oracle.com/cd/E51728\\_01/E51729/html/reqs-client.html](http://docs.oracle.com/cd/E51728_01/E51729/html/reqs-client.html).

---

### Accessing P6 Professional

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**Note:** Ten minutes after closing the browser or logging out of Primavera Virtual Desktop, the P6 Professional session times out. If you log back in within ten minutes, the session remains active.

---

To access P6 Professional with Primavera Virtual Desktop:

- 1) Log in to the Primavera Cloud Portal.
- 2) Click **Primavera Virtual Desktop for P6 Professional**. The **Login to Primavera P6 Professional** dialog box opens.
- 3) In the **Login to Primavera P6 Professional** dialog box, complete the following:
  - a. In the **Login Name** field, enter your username.
  - b. In the **Password** field, enter your password.
  - c. Click **OK**.

After you have been authenticated, a virtual desktop for P6 Professional will launch.

## Exporting Project, Roles, and Resources

When you attempt to export projects, roles, and resources with P6 Professional on Primavera Virtual Desktop, you must select a location on one of your network drives.

---

**Caution:** If you attempt to export projects, roles, or resources to a network drive on the virtual desktop, you might not be able to access the exported data.

---

To export project, roles, or resources:

o export project, roles, or resources:

- 1) From the **File** menu, select **Export**. The **Export** wizard opens.

---

**Note:** Click **Next** after you have completed the steps for each screen of the **Export** wizard.

---

- 2) On the **Export Format** screen, select an export format.

- 3) On the **Export Type** screen, select one of the following:

- ▶ **Project**
- ▶ **Resource Only**
- ▶ **Role Only**

---

**Note:** If you select **Resource Only** or **Role Only**, you can skip the next step.

---

- 4) On the **Projects To Export** screen, select the projects that you want to export.
- 5) On the **File Name** screen, browse to a location on your local network that you want to export your projects, resources, or roles.
- 6) Click **Finish**.

---

## Importing Projects, Roles, and Resources

When you attempt to import projects, roles, and resources to P6 Professional on Primavera Virtual Desktop, you must select a file from a location on one of your local network drives.

To import projects, roles, or resources:

- 1) From the **File** menu, select **Import**. The **Import** wizard opens.

---

**Note:** Click **Next** after you have completed the steps for each screen of the **Import** wizard.

---

- 2) On the **Import Format** screen, select an import format.
- 3) On the **Import Type** screen, select one of the following:
  - ▶ **Project**
  - ▶ **Resource Only**
  - ▶ **Role Only**
- 4) On the **File Name** screen, select a project, resource, or role on your local network drive.
- 5) Click **Finish**.

---

## Printing Using Primavera Virtual Desktop

When using the print option in P6 Professional using Primavera Virtual Desktop, you have the option to print directly to your computer's default PDF viewer or printer.

To print:

- 1) From the **File** menu, select **Print**. The **Print** dialog box opens.
- 2) In the Name menu, select one of the following:
  - ▶ **Universal PDF Viewer** to open a PDF of your P6 Professional screen in your local PDF viewer.
  - ▶ **Universal PDF Printer** to print a PDF of your P6 Professional screen using the default printer for your network.

---

**Note:** After you choose to print using the Universal PDF Viewer or Universal PDF Printer setting, the action occurs immediately without additional prompts on your computer.

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- 3) Click **OK**.

---

## Using Claim Digger

Claim Digger is used to compare the current version of a project against its baseline so that you can access a report that displays the differences between added, deleted, or changed information between projects.

When you use Claim Digger, you must designate a location to which your project comparison will be exported. You must export Claim Digger reports to your local network drive.

## Primavera Risk Analysis Setup Tasks

Primavera Risk Analysis can read project data from a P6 EPPM database in the cloud. By integrating Primavera Risk Analysis with P6 EPPM you can enable P6 users to analyze risks in their projects.

### In This Section

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<u>Connecting Primavera Risk Analysis to a P6 EPPM Cloud Database</u> .....	80

## Primavera Risk Analysis and User Access Privileges

Primavera Risk Analysis uses P6 EPPM's security when it connects to a P6 EPPM database. Users that have been provisioned to use P6 EPPM applications can only use Primavera Risk Analysis for the projects to which they have access. For more information about user security and access privileges, see the *P6 EPPM Application Administrator's Guide*.

## Connecting Primavera Risk Analysis to a P6 EPPM Cloud Database

To connect Primavera Risk Analysis to a P6 EPPM cloud database:

- 1) Open **Primavera Risk Analysis**.

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**Note:** If you have Primavera Risk Analysis open, you must close any open plans before you can connect to a P6 EPPM Cloud Database.

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- 2) Click **File**.
- 3) On the **File** menu, select **Primavera** and then click **Connection Wizard**.
- 4) In the **Primavera P6 Connection Wizard** dialog box, complete the following:
  - a. Select **P6 Cloud** and then click **Next**.
  - b. Enter the required information in the following fields:

- **Apache CFX Location:**The path to the Apache CXF application.

---

**Note:** You must install the services framework Apache CXF version 2.2.7 in order to connect to P6 EPPM Web Services. You can download Apache CXF from <http://archive.apache.org/dist/cxf/2.2.7>. After launching the site, you must select the download files that correspond to the windows operating system (for example, `apache-cxf-2.2.7.zip`). Extract the file to a folder on your computer.

---

- **Java JRE Location:** The file path to a version of JRE that is supported by P6 EPPM. For more information about supported versions of JRE, see *Tested Configurations*.
- **Web Services URL:** The Web Services URL that can be found on the Cloud Welcome page.



- **Proxy Host:** Enter the proxy host address if your company uses a proxy to connect to the internet. If you do not use a proxy, leave this field empty.
- **Proxy Port:** Enter the proxy port number if your company uses a proxy to connect to the internet. If you do not use a proxy, leave this field empty.
- **Authentication Method:** Select either **Username Token Profile** or **HTTP Cookie**. You can determine which authentication method that you need to select based on the P6 EPPM Web Services URL from **Web Services Instructions...** on the Primavera Cloud Portal.

If the URL is *https://pgbu-vbe2-p6.oracleindustry.com/p6ws-token*, select **Username Token Profile**.

If the URL is *https://pgbu-vbe2-p6.oracleindustry.com/p6ws*, select **HTTP Cookie**.

c. Click **Next**.

d. If necessary, complete the following:

- Set the **Java Heap Size**. Java Heap Size is an optional setting to define the Java Heap Size when importing large projects. By default this is set to 512Mb and should remain on this setting unless errors occur importing large projects.
- Select **Always display import log**.
- Select **Use these connection setting for all Primavera Risk Analysis users**.

e. Click **Next**.

f. Click **Finish**.

## Configuring Oracle BPM to Work with P6

The Oracle Business Process Management (BPM) Suite provides an integrated environment for developing, administering, and using business applications centered around business processes. BPM supports BPM and Business Process Execution Language (BPEL) standards from modeling and implementation to run-time and monitoring.

P6 integrates with BPM which lets you initiate and manage workflows. You can use a sample project initiation workflow for P6 sample database that is available on OTN.

You can expand your investment in BPM to include workflows representing more stages of your application, program, project, or product development life cycle from design-time and implementation to run-time and application management.

The Oracle BPM Suite enables you to:

- ▶ Create and customize business processes, models, and standards using pre-defined components for web-based applications.
- ▶ Collaborate between process developers and process analysts.
- ▶ Expand business process management to include flexible, unstructured processes.
- ▶ Integrate your applications with Web Services.
- ▶ Add dynamic tasks and support approval routing using declarative patterns and rules-driven flow determination.

---

Unify different stages of your development life cycle by addressing end-to-end requirements for developing process-based applications. Oracle BPM unifies the design, implementation, run time, and monitoring stages based on a Service-Oriented Architecture (SOA) infrastructure. This allows different personas to participate through all stages of the workflow life-cycle.

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### In This Section

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## Assigning the TestConfig Role to Users

To use this workflow, you need to assign a BPM role for the user to initiate the test and receive the confirmation the test was successful.

To assign the role:

- 1) Login to the BPM Workspace as a user with administrative rights.
- 2) Click **Administration** on the top right toolbar.
- 3) On the **Organization Roles** list, select **P6ConfigValidator.TestConfig**.
- 4) On the **Details** pane, make one or more BPM users or user groups a member of the **TestConfig** role. The BPM users or user groups assigned to the TestConfig role must match a P6 username for the workflow to be visible from P6.
- 5) Click **Apply** to save these changes.

## BPM Workflows in P6

The following sections detail information about workflows and how to work with them.

### In This Section

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### About Workflows

A workflow is an automated business process that routes information and tasks between participants according to a defined set of procedures or rules designed to coordinate a specific business goal. Workflows are primarily characterized by their level of procedural automation involving one or more dynamic related series of processes, and their combination of human and machine-based tasks involving interaction with software and systems.

The following industry segments, marked by relatively high office labor costs and transaction volume, have demonstrated successful workflow implementations:

- ▶ Insurance
- ▶ Banking
- ▶ Legal
- ▶ General & Administrative
- ▶ Design
- ▶ Engineering
- ▶ Manufacturing

Business process modeling and workflow automation allow transactions to be conducted electronically without the need for manual intervention such as conducting certain validations or re-keying data. When workflow IT systems are processing repetitive, mundane, and often error-prone work, talented staff resources become available to handle activities that add real value to the enterprise.

---

## Working with Workflows in P6

You can use workflows to route business processes such as project initiation requests through your organization to gather information and visibility before a go/no go decision is made. Template data, routing designators, and approval rules can be set for each stage of a workflow. To illustrate these options, pretend we have a workflow involving five key approval managers. You can define the workflow such that all five must approve and even specify a particular sequence, if any. A much more relaxed approval rule would require only one out of the five to approve. The following are just some example of how you can use workflows.

Workflows are defined, deployed, and configured in BPM where your workflow designer defines the workflow tasks involved and assigns them to specific users, roles, or groups. Then, in P6, a business need kicks off an instance of the workflow and its required tasks are automatically routed to their users, roles, or groups.

When a specific user or any user assigned to a role or group logs into P6, the Workflows portlet on their dashboard will display their relevant tasks at this stage of the workflow, as authenticated by BPM. As a workflow participant, you can select a task in the workflow instance and claim ownership for it. This means you will be responsible for performing the task. The application refreshes itself to show only the actions permitted for this stage of the workflow for you (the currently logged in user).

After your administrator sets up BPM for P6, they can configure a dashboard to display the Workflows portlet. The following list represents a list of the key Workflow elements that you can observe in the portlet depending on your configuration.

- ▶ **Action Required Tab:** This tab shows the tasks that are important to you (the currently logged in user).
- ▶ **My Workflows Tab:** This tab enables you to view all workflows according to role and status filters you can set.
- ▶ **Initiate a Workflow:** Click Initiate a Workflow to start a new instance of a workflow based on a predesigned template.
- ▶ **BPM Workspace:** Use the BPM Workspace to update the progress of tasks, initiate a change, request a project, and retrieve project information. You are also able to apply a bulk action to multiple work items.
- ▶ **Sample Workflow:** A basic workflow image with tasks for a business user, two project offices, and a project manager
- ▶ **Workflow History:** View a chronological sequence of all the previous actions, users, and stages in the current workflow.

# Primavera Analytics Setup Tasks

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This chapter provides a general overview of Primavera Analytics and the Primavera Data Warehouse.

- ▶ Oracle Primavera Analytics provides an in-depth and comprehensive method for analyzing and evaluating project performance, project history, resource assignments and utilization, business processes, cash flows, and cost sheets.
- ▶ The Primavera Data Warehouse works with the P6 EPPM database and the Primavera Unifier database to provide a robust and powerful reporting solution.

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## About Primavera Analytics

Primavera Analytics consists of a Repository Definition, a sample catalog containing sample analyses and dashboards, as well as a sample Primavera Data Warehouse. Primavera Analytics is built upon the industry leading Oracle Business Intelligence Suite. The Primavera Analytics Repository Definition contains all of the information Oracle Business Intelligence needs to allow end users to create purposeful analysis based on data contained within the Primavera Data Warehouse. The Repository Definition contains information such as how Oracle Business Intelligence connects to the Primavera Data Warehouse, how security is applied to each user, and how to join the Primavera Data Warehouse fact and dimension tables. The Primavera Analytics sample catalog, also built upon Oracle Business Intelligence, contains over 300 pre-built analysis and dashboards, organized in a catalog structure, used to help facilitate the capabilities available combining P6 EPPM and/or Primavera Unifier with Oracle Business Intelligence. The sample Primavera Data Warehouse can be restored and connected as the back-end for the sample Primavera Analytics catalog.

## About the Primavera Data Warehouse

The Primavera Data Warehouse collects and stores data from P6 EPPM and Primavera Unifier. It contains a process called STARETL, which is the mechanism by which data is *extracted, transformed, and loaded* (ETL) from a P6 EPPM and/or Primavera Unifier database into the Primavera Data Warehouse. The Primavera Data Warehouse accumulates data over time with each run of the STARETL process.

The Primavera Data Warehouse separates data into facts and dimensions. Fact tables contain business facts or measures (for example, Actual Total Cost, Workflow Duration, and so on). Dimension tables contain descriptive attributes or fields (for example, Activity Name, Cost Breakdown Structure, and so on). As the Primavera Data Warehouse schema accumulates project and cash flow data, it provides baselines for tracking trends and for advanced business intelligence. It also provides key metrics on current data, which allow you to drill through root cause analysis.

You can connect the Primavera Data Warehouse to Oracle Business Intelligence (OBI) using Primavera Analytics.

## Overview of OBI

Oracle Business Intelligence (OBI) is a comprehensive suite of business intelligence foundation and applications designed to enable the insight-driven enterprise. It integrates data from multiple enterprise sources, and transforms it into key insights that enable strategic decision-making, drive continual business process improvements, and promote alignment across the enterprise.

Primavera Analytics provides the following default dashboards:

- ▶ Main
- ▶ Business Processes
- ▶ Cash Flow
- ▶ Cost Sheet
- ▶ Portfolio Analysis
- ▶ Project Earned Value
- ▶ Project Health
- ▶ Resource Analysis
- ▶ Industry Samples

For information about the Business Intelligence & Data Warehousing Technology Center, go to the following website:

<http://www.oracle.com/technetwork/topics/bi/index.html>

For information about the Business Intelligence & Data Warehousing documentation, go to the following website:

<http://www.oracle.com/technetwork/middleware/bi-foundation/documentation/bi-dac-087220.html>

## Configuring Primavera Analytics

Primavera Analytics includes three components that will use for configuration.

- ▶ **Primavera Analytics Repository Definition:** The Repository Definition contains all of the mappings and metadata that are needed to create meaningful Oracle Business Intelligence analysis. This is considered a main component of Primavera Analytics because it is the only component that is needed if using Primavera Analytics and Primavera Data Warehouse with Oracle Business Intelligence. The Primavera Analytics Repository Definition tells Oracle Business Intelligence what Primavera Data Warehouse fact and dimension tables to join, and how to join them. The Primavera Analytics Repository Definition also contains the calculations that are used for certain Key Performance Indicators (KPIs) that end users can use to create more meaningful analysis. The Primavera Analytics Repository Definition is segmented into two layers:
  - ▶ The **Business Model Layer**, which describes the metadata mapping and configurable KPIs.
  - ▶ The **Presentation Layer**, which is what the end user will see when creating analysis within Oracle Business Intelligence.

---

**Note:** You cannot access the Repository Definition natively with the web application. To access or modify the Repository Definition, you must submit a service request to My Oracle Support.

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- ▶ **Primavera Analytics Catalog:** The catalog is used by Oracle Business Intelligence to store in a single location the collection of analysis, dashboards, and filters that are created and stored by users of the system. Primavera Analytics includes a sample Oracle Business Intelligence catalog, which includes sample dashboards, analysis and filters. These samples can be used out of the box or tailored to meet your organizations specific needs. This sample catalog was built on top of and using the third component of Primavera Analytics, the sample Primavera Data Warehouse.
- ▶ **Sample Primavera Data Warehouse Schema:** This sample schema was created in conjunction with the sample P6 EPPM and Primavera Unifier databases. The sample Primavera Data Warehouse contains sample fact and dimension tables, including daily history captures, used to demonstrate the capabilities of Oracle Business Intelligence dashboards, analysis and filters. This sample Primavera Data Warehouse schema can be configured in conjunction with the other two components: the sample catalog and the Repository Definition.

The following topics explain how to configure the three components of Primavera Analytics.



## Configuring Primavera Analytics

This section describes the setup tasks for using Primavera Analytics.

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### Web-Based Configuration Utility

You can use the web-based Configuration Utility to configure P6 EPPM Codes and UDFs. The web-based Configuration Utility can be used to run and schedule runs of the STARETL process, and view the history and logs from previous runs of the STARETL process directly from within the web-based Configuration Utility interface. The web-based Configuration Utility also allows administration of the Primavera Data Warehouse from any location in the application.

#### Using the Web-Based Configuration Utility

After successfully deploying the web-based Configuration Utility in WebLogic, you can now use this utility to schedule and run STARETL processes, view the history and log information of previously run STARETL processes, and configure P6 EPPM Codes and UDFs for loading into the Primavera Data Warehouse.

The web-based Configuration Utility contains a series of parent/child/sub-child tabs which are used to control, monitor, and change various components of the Primavera Data Warehouse configuration. The parent level tabs contain a Home Tab and a tab for each STARETL process configuration for the Primavera Data Warehouse. Primavera Data Warehouse data source. The child level tab contains subordinate information (Schedule, Status, Codes, UDFs) for the parent tab that is selected. The sub-child tabs are used on the UDF screen to configure and select the UDF types.

The following topics give more details about the available tabs within the web-based Configuration Utility.

### Home Tab (Parent Tab)

Complete the following steps to view the home tab of the web-based Configuration Utility:

- 1) Log in to Primavera Analytics.
- 2) Select the **Home** tab.
- 3) In the **Current Running ETLs** section, view ETLs that are running or have run.
- 4) If you want to stop an ETL, see **Stopping STARETL Process Runs in the Web-Based Configuration Utility** (on page 94).

---

**Note:** If you have never run a STARETL process, the Home tab will not contain information about STARETL process that have been run.

---

### STARETL Tab (Parent Tabs)

The STARETL tab will contain information about each configuration of Primavera Data Warehouse that you have set up in your organization. If you have multiple data sources (P6 EPPM and/or Primavera Unifier), then you will have multiple STARETL parent tabs (named differently but containing the same child level tabs).

---

### Schedule (Child Tab)

The Schedule child tab is used to run and/or set up a schedule of runs for the STARETL process, for the particular data source (STARETL parent tab) that is selected.

To run and/or set up a schedule of runs for the STARETL process for this particular data source (STARETL parent tab), complete the following steps:

- 1) Log in to Primavera Analytics.
- 2) Select the **STARETL parent** tab for the data source you want to configure and click the Schedule child tab.
- 3) If you want to run the STARETL process immediately, click **Run ETL**.
- 4) If you want to schedule an ETL, in the **Schedule ETL** section:
  - a. In the **Schedule Frequency** field, select the frequency at which you want to schedule STARETL process runs to occur (select **Daily** or **Weekly**).
    1. If you select **Daily** in the **Schedule Frequency** field, the Run ETL at dialog will appear allowing you to specify a time that you want the STARETL process to be run every day.
    2. If you select **Weekly** in the **Schedule Frequency** field, the Run ETL at dialog will appear allowing you to specify a time that you want the STARETL process to be run every day as well as a series of checkboxes to select which day(s) of the week you want to recurrently run the STARETL process.
    3. If you select **None** in the **Schedule Frequency** field, then you are saying you do not want to set up a schedule for this STARETL process.
  - b. In the **Log Level** section, select what information you want the application to log when the ETL runs. You can choose the following:
    - **Errors and Warnings:** Logs errors and warnings.
    - **General Information:** Logs errors, warnings, and informational messages on the progress of each step. This is the default value.
    - **Debug and Trace Information:** Logs all general information, errors and warnings, and detailed output of each executed script, query, and connection.
    - **Errors Only:** Logs only errors and no other information.
    - **Extra Debug Information:** Logs all general information, errors, and warnings. It provides more fine grained information on each executed step and script.
- 5) Click **Save** to save the configured schedule information for this STARETL process.

## Codes (Child Tab)

Use the Codes (Child) tab if the STARETL parent tab contains a P6 EPPM data source. If the STARETL parent tab contains a Primavera Unifier data source you can skip this topic.

The Codes child tab is used to configure the Project, Activity, and Resource Codes that will be used for the particular P6 EPPM data source (STARETL parent tab) that is selected.

---

**Note:** Primavera Unifier code configuration is done within Primavera Unifier. See the Primavera Unifier documentation for details.

---

The Codes child tab has three child tabs as well. Each Code type (Project, Activity, and Resource) have their own individual tabs, and the codes available in each of these tabs will only be for that particular code type.

Use the Codes child tab, and Project, Resource and Activity sub-child tabs to choose the available codes that can be extracted from P6 EPPM and loaded into the Primavera Data Warehouse.

---

### Notes:

- Based on the P6 EPPM data source that is chosen on the STARETL parent tab, the list of available codes will be populated.
  - Primavera Data Warehouse has a limit of 240 codes for EACH supported type (Project, Activity, and Resource).
- 

On each Codes sub-child tab (Project, Activity, Resource), the left hand list box contains the list of available Project, Activity, and Resource codes that can be extracted from P6 EPPM and loaded into Primavera Data Warehouse. The right hand list box contains the list of selected Project, Activity, and Resource codes that have been selected to be extracted from P6 EPPM and loaded into Primavera Data Warehouse.

To move codes from the available list box to the selected list box, simply click on the code you want to move in the available list box and click the -> button (located between the available and the selected list boxes) to place the selected code from available list to selected list.

Alternatively, if you want to deselect a code, that is move the code from the selected list box back to the available list box, simply click on the code you want to move in the selected list box and click the <- button (located between the available and the selected list boxes) to place the selected code from selected list box to the available list box.

## Additional Information on Codes

The Selected Codes list box contains two additional columns (Scope and Index). The Scope column is used only for Activity Level Codes. Due to the fact that activity codes within P6 EPPM can be configured at different levels (Global, EPS, and Project), the Primavera Data Warehouse enables you to define the Scope at which you will use these activity codes.

The Scope column determines at which level an activity code exists in the event that the same code name is mapped at different levels (Global, EPS, and Project). For example, if you have a global activity code called MyCode, and a project activity code called MyCode, the scope setting would determine which activity code value to use.

The final column in the Selected Code list box is the Index column. The Index column is simply used to determine the placement of the selected code type (Project, Activity and Resource) within the Primavera Data Warehouse code table.

All codes configured in the Configuration Utility are available as hierarchies in the Primavera Data Warehouse. Full path values or specific node level values are available for each code. Code Hierarchies apply to only Project, Activity (Global only), and Resource codes. Hierarchies do not apply to Activity codes in Project or EPS codes. There are no additional configuration steps required to use code hierarchies.

When you are finished selecting Codes, click **Save Changes** to save the code mappings that you have selected.

---

### Status (Child Tab)

You can view STARETL process reports and logs from the **Status** page for each recently run STARETL process.

To view information regarding the status and log for the STARETL process for this particular data source (STARETL parent tab), complete the following steps:

- 1) Log in to Primavera Analytics.
- 2) Select the **STARETL parent** tab for the data source you want to configure and click the **Status child** tab.
- 3) On the **Recent running ETLs** page:

This page contains a table structure that allows you to view key information about STARETL processes that have been run for this data source (STARETL parent tab). The information contained in this table includes:

**ETL Id:** The unique identifier for the STARETL process

**ETL Start Date:** Contains the date that this run of the STARETL process started. This date is based on the server time where the STARETL process was run.

**ETL End Date:** Contains the date that this run of the STARETL process ended. This date is based on the server time where the STARETL process was run.

**Status:** Indicates the status for this run of the STARETL process. Statuses can include:

**OK** indicates that this run of the STARETL process completed successfully.

**Running** indicates that this run of the STARETL process is still running.

**Failed** indicates that this run of the STARETL process has failed. If the status is Failed for a particular run of the STARETL process, click the View Report and View Log links next to that particular run in the Status table to get more information on why this run of the STARETL process has failed.

**Report:** Provides a link to the job report for this run of the STARETL process.

**Log:** Provides a link to the STARETL process log for this run of the STARETL process.

## UDFs (Child Tab)

Use the User-Defined Fields page to choose the Project, Activity, Resource, Resource Assignment, and WBS level UDF fields from P6 EPPM that will migrate to the Primavera Data Warehouse. The Primavera Data Warehouse supports Cost, Non-Cost, Date, and Text UDF types.

---

### Notes:

- The Primavera Data Warehouse has a limit of approximately 240 UDFs for each supported type (Cost, Non-Cost, Date, and Text).
  - Number and Integer UDF types are displayed in the 'Non-Cost' folders.
- 

To configure the UDFs for the STARETL process for this particular data source (STARETL parent tab), complete the following steps:

Log in to Primavera Analytics.

- 1) Select the **STARETL parent** tab for the data source you want to configure and click the **UDFs child** tab.
- 2) Select the **Project, Activity, Resource Assignment, Resource, or WBS** tab.
- 3) Select the **Cost, Date, Non-Cost, or Text** tab.
- 4) Move the UDFs that you want to use from the available column to the enabled column.
- 5) Select **Save Changes**.

---

## Stopping STARETL Process Runs in the Web-Based Configuration Utility

The web-based Configuration Utility has the ability to stop currently running STARETL processes.

To stop STARETL process runs that were initiated through the web-based Configuration Utility, complete the following steps:

- 1) Log in to Primavera Analytics.
- 2) Select the **Home** tab.
- 3) In the **Current Running ETLs** section, locate the STARETL process run you want to stop and select the **Stop** button next to it.
- 4) Click **OK** when you are asked "Are you sure you want to Stop ETL process for STARETL?". The Home tab changes to show the ETL is not running.

## P6 EPPM and Primavera Unifier Privileges

The Primavera Data Warehouse adheres to the same user privileges and access rights as P6 EPPM and Primavera Unifier. Additional privileges may need to be granted to specific P6 EPPM and Primavera Unifier users. These privileges include Organizational Breakdown Structure (OBS), Cost access, and Resource access. Refer to the *P6 EPPM Application Administrator's Guide* for details about user privileges.

The following table briefly describes the Primavera Data Warehouse and P6 EPPM privileges:

Type	Description
OBS Access	Users who have OBS access in P6 EPPM will have OBS access in OBI.
Edit EPS Costs/Financials	Users who have access to projects in the P6 EPPM database and who have this privilege set will have the same privilege in the Primavera Data Warehouse database.
Resource Access	Resource access can be set to one of the following: <b>All resource access:</b> The user will have unrestricted access to resources. <b>None:</b> The user cannot access any resources. <b>Specific resource access:</b> The user can only access a specific resource.

**Note:** After modifying any P6 EPPM security privilege that affects the Primavera Data Warehouse, it is required that the "Publish Security" Global Scheduled Service be run prior to running the STARETL process. This ensures that the correct privileges have been applied to the user account.

Primavera Unifier user privileges are controlled both at the Company and the Project level. See the Primavera Unifier documentation for details.

## About Oracle Primavera Analytics

Oracle Primavera Analytics provides an in-depth and comprehensive method for analyzing and evaluating project performance, project history, resource assignments and utilization, business processes, cash flows, and cost sheets.

Built upon the Oracle Business Intelligence (OBI) suite, Primavera Analytics delivers a catalog of analyses that provide an interactive way of viewing, analyzing, and evaluating P6 EPPM and Primavera Unifier data. In addition, Primavera Analytics provides a repository definition that contains the data mappings between the physical data and the presentation layer of OBI.

The dashboards provide detailed insight into your P6 EPPM and Primavera Unifier data through analytical charts, tables, maps, and graphics. Dashboards allow you to navigate to other analyses to provide precise root-cause analysis. OBI allows you to configure individual analyses with P6 EPPM and Primavera Unifier Action Links, enabling you to navigate directly to your P6 and Unifier site for true "Insight to Action" capabilities. You can save analysis created with OBI in the OBI Presentation Catalog and integrate the analysis into any OBI dashboard. You can enhance results through options such as charting, results layout, calculations, and drill-down features.

Use Primavera Analytics to:

- ▶ Perform root-cause analysis and employ management-by-exception.
- ▶ Gather critical insights into current and historical performance of all projects, programs, and portfolios.
- ▶ Drill down from aggregated metrics to examine the root-cause of a problem
- ▶ Make better decisions to eliminate project failure.
- ▶ Quickly visualize critical project performance in early stages.
- ▶ Identify and predict cost sheet and cash flow trends early in the project life cycle.
- ▶ Gain visibility into resource performance through s-curve analysis.
- ▶ Show staffing needs by portfolio with early warning indicators for upcoming under-staffed project work.
- ▶ Roll-up business processes to understand trends and trends by various dimensions.
- ▶ Use geospatial visualization to view project, activity, and resource data metrics by geographic location with full drill-down capabilities.

Primavera Analytics provides a repository definition to use with the OBI suite. The repository definition contains:

- ▶ A physical representation of the Primavera Data Warehouse.
- ▶ A business layer to perform customized calculations.
- ▶ A presentation layer that groups all the calculated business layer fields into logical subject areas.

The repository definition delivers an extensive list of key performance indicators (KPIs) from both P6 and Primavera Unifier. Depending on the data source, this list includes (but is not limited to) Earned Value, Costs, Units, Percent Completes, Counts, Business Processes, Cash Flow, and Cost Sheets. It also enables data to be sliced by various dimensions, including time, EPS, portfolios, projects, activities, resources, project hierarchies, cost breakdown structures, and business processes.



Primavera Analytics delivers a sample dataset, consisting of the Primavera Data Warehouse data, where the dashboards and analyses in the catalog were built. You can use this sample data to view the power of dashboard and analyses delivered in the catalog, and see how you can integrate the catalog with your data.

### Adding P6 EPPM Users for Primavera Data Warehouse

If you are using only Primavera Unifier, you can skip this topic. See ***Adding Primavera Unifier Users for Primavera Data Warehouse*** (on page 98) instead.

In order for a P6 EPPM user to access data in the Primavera Data Warehouse, you must set up the correct user security in P6 EPPM prior to running the STARETL process.

To configure a new P6 EPPM user to access the data within the Primavera Data Warehouse, complete the following steps:

- 1) Log in to P6 EPPM with a user account that has Administrator privileges.
- 2) In P6 EPPM, go to the **Administer** menu link, and select **User Access**.
- 3) From the **User Access** window, create or modify the user accounts that will need access to data within the Primavera Data Warehouse.
- 4) Select the user account, and in the lower section of the screen, click the **Module Access** tab.
- 5) In the **module access** panel, place a check mark (double click in the checkbox so it becomes selected) in the access column next to the **P6 Analytics** module to grant this users access to data in the Primavera Data Warehouse.
- 6) Click the **Save** icon on the toolbar to save the module access settings for this user.
- 7) Repeat these steps for each user account that will need to access data from the Primavera Data Warehouse.
- 8) Once all the user privileges and access in P6 EPPM are set up and complete, the "Publish Security" Global Schedule Service needs to be run.

---

**Note:** You can schedule this service to run immediately or later, but it must run to successful completion prior to running the STARETL process.

---

## Adding Primavera Unifier Users for Primavera Data Warehouse

For a user to access data in the Primavera Unifier through OBI, you must set up security in both P6 EPPM and OBI.

To add a new user:

- 1) In Primavera Unifier, go to the **Company Workspace** tab and switch to Admin mode.
- 2) Click **Access Control** in the left Navigator.
- 3) On the right pane, select **Administration Mode Access > Analytics**. The Permission Settings window opens. Here you can add, modify, or remove permission settings.
- 4) Click **Add**. Another Permission Settings window opens.
- 5) Click **Add Users/Groups**. The Users/Groups window opens.
- 6) Select users and groups you want to add and click **Add**.
- 7) Click **OK** to return to the Permission Settings window.
- 8) Do the following to set permissions:
  - a. Select the users and groups in Select Users/Groups (in the upper portion of the window).
  - b. Select the appropriate level of access in Permissions Settings (in the lower portion of the window):
    - **View**: Allows users and groups to open and view the contents in Analytics node. Users with View permission cannot make any changes.
    - **Modify**: Allows users and groups to configure and modify the data required for Analytics. This setting also includes View permission. Users are also able to set schedule for publishing data, for various areas in Unifier, to the Oracle Business Intelligence (OBI) server. The View option must be selected for the users with Modify permissions.
  - c. Click **OK**.
- 9) Click **Apply** to save changes and keep the window open or click **OK** to save changes and close the window.

---

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

---

## Adding Additional Financial Periods

The Primavera Data Warehouse can use two additional financial periods. To add additional financial periods, submit a service request to My Oracle Support.

### Including Inactive Resources from P6 EPPM in the Primavera Data Warehouse Tables

By default, the Primavera Data Warehouse tables filter out inactive resources. If you include inactive resources, the spread data and other dimension tables will also include them. You may not need to process this extra resource assignment information.

If you want to include inactive resources in the Primavera Data Warehouse tables, submit a service request in My Oracle Support.

### Log Files

The Primavera Data Warehouse creates extensive log files that provide information about the installation and daily operations. These log files are accessible in the Web-Based Configuration Utility on the Status tab.

### Using History Settings for P6 EPPM Data

P6 EPPM provides the ability choose the level (Project, WBS, Activity) and interval (Yearly, Quarterly, Monthly, Daily) of history data to be captured and stored in the Primavera Data Warehouse.

---

**Note:** Primavera Unifier also provides the ability to capture and store history data, however data can be captured only at the Weekly level, so no additional settings are required.

---

## Creating History Data for P6 EPPM

In P6, you can define history level and interval settings on a per project basis. Use P6 to configure the type of data stored in Primavera Analytics and in what time interval.


To configure history settings:

- 1) Log in into P6.

---

**Note:** A user must have the **Edit Project Details Except Cost/Financials** profile to edit the history settings.

---

- 2) Click **Projects**.
- 3) On the **Projects** navigation bar, click **EPS**.
- 4) On the **EPS** page:
  - a. Select a project.
  - b. Click the **Actions** ▼ menu and select  **Set Project Preferences**.
- 5) In the **Project Preferences** pane, click **Analytics**.
- 6) On the **Analytics** page:
  - a. Select the **History Level** and **History Interval** settings.

You can choose one of the following for History Level:

- **None** (the default)
- **Project**
- **WBS**
- **Activity**

You can choose one of the following for History Interval:

- **Month** (the default)
- **Week**
- **Quarter**
- **Year**
- **Financial Period**

- b. Click **Save** to continue working or click **Save and Close** if you are finished.

---

**Note:** If you select **Activity** as the **History Level**, this will automatically set the **History Interval** for Activity and Resource Assignment history to **Daily**. Use caution when selecting which projects you choose to have daily history captures as this can affect the amount of time and the volume of data processed when running the ETL process. You still need to set the history interval level when selecting Activity level history, which will apply to project and WBS-level history only.

---

- 7) Run the publication services to publish the changes you made.
- 8) To create history data, run the ETL process with the Web-based Configuration Utility.

## Using Slowly Changing Dimensions and Daily Snapshot Fact Tables for P6 EPPM Data

Slowly changing dimensions (also known as Type 2 dimensions) preserve an attribute's history of values by capturing non-fact or dimensional data and associating that data with the correct version of the fact row. Captured data includes project, resource, activity, resource assignment dimensional data, and more. Slowly changing dimensions are used when it is important to preserve the historic context of facts.

When source data elements change or when the STARETL process is run, a new row is added to the dimension table and the previous row is left unchanged. Previously recorded facts remain associated with the old dimension row and new facts are associated with the new dimension row. These rows show the changes to an attribute over time. For example, if the Planned Start Date for an activity has changed between the current capture and the previous capture, the old and new date would both be recorded in the dimension table.


Dimension rows in the dimension table are distinguished by the Effective Start Date, Effective End Date, and Current Flag. The date and time the STARETL process starts becomes the Effective Start Date for the new dimension row. The new version of a dimension Effective End Date defaults to 01-Jan-3000 00:00:00. When the STARETL process is run again, the Effective End Date for the latest version of the attribute then becomes the Effective Start Date for the current version minus one second. For example, if the Effective Start Date for the current version of the attribute is 17-Nov-2014 08:00:00, then the Effective End Date for the previous version becomes 17-Nov-2014 07:59:59. The most recent dimension row in the dimension table has a value of "1" in the Current Flag column. All other rows have "0" in the Current Flag column.

Daily snapshot fact tables enable the daily capture of metrics at the Resource Assignment and Activity Levels. Daily snapshot fact tables are used in conjunction with slowly changing dimensions. For example, when the Activity History daily snapshot is recorded, new fact rows will be updated with the most current version of each record in the activity dimension. Previously recorded facts remain associated with the old dimension row version.

The daily snapshot makes it easy to determine what metrics such as Remaining Units looked like at any point in time across all projects that have been opted into this level of data capture.

## Enabling Daily History Snapshots and Slowly Changing Dimensions

To enable slowly changing dimensions and daily history snapshots for a project:

- 1) Log in to P6 EPPM.
- 2) In P6, click **Projects**.
- 3) On the **Projects** screen navigation bar, click **EPS**.
- 4) On the **EPS** page:
  - a. Select a project.
  - b. Click the **Actions** ▼ menu and select  **Set Project Preferences**.
- 5) In the **Project Preferences** dialog box:
  - a. Ensure the project is configured for Publication Services.
    1. On the **Project Preferences** pane, click **Services**.
    2. On the **Services** page, select the **Enable Publication** option in the **Publication** section.
  - b. Configure the project's History Level setting.
    1. In the **Project Preferences** pane, click **Analytics**.
    2. On the **Analytics** page, click the **History Level** drop-down and select **Activity**.

---

**Note:** You should still configure the History Interval setting, but it will only apply to Project and WBS-level history metrics.

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- 
- 
- 
- 
- c. Click **Save and Close**.

---

## Turning Off Slowly Changing Dimensions

If you turn off the slowly changing dimensions for a field, the current dimensional row can be updated with a new value without the addition of a new dimensional row.

For example, if slowly changing dimensions have been enabled for the Activity Description field, then changes made to this field will cause a new row to be added to the dimensional table the next time the STARETL process is run. If slowly changing dimensions have not been enabled for the EPS Name field, then the STARETL process will not update the dimensional table with a new row. Modifying slowly changing dimensions for each field can prevent cascading updates to fact tables. For example, if a change is made to the EPS table, that change would cause a new row to be added to the dimension table for all of the activities affected by the change.

---

**Note:** To modify slowly changing dimensions for each field, submit a service request in My Oracle Support.

---

## Using Burn Down for P6 EPPM Data

Primavera Data Warehouse and Primavera Analytics contain an additional way that data can be analyzed outside of the standard P6 EPPM methods. Primavera Data Warehouse and Primavera Analytics include additional tables and configuration for Burn Down. In the simplest of terms, Burn Down is a set of calculations that display how a project will progress if everything goes "according to plan". Primavera Analytics includes metrics and Key Performance Indicators (KPIs) for both the current project data, as well as any point in the past for which the data was captured. These metrics and KPIs include both current and historical activity counts, units, and costs. Primavera Analytics and Primavera Data Warehouse has the ability to track and monitor how the current schedule is executing in relationship to how it was supposed to progress at the start of the project (T-0). This includes, but is not limited to, any new activities that were added to the current project that did not exist at the start of the project (emergent), activities that have been removed in the current schedule that existed in the point in time capture of the project (deleted), and activities whose start or finish has changed since the point in time capture of the project.

Use the sections in this chapter to learn more about the additional functionality, how to set it up in P6 EPPM, and how to work with the data in Primavera Analytics.

---

**Note:** Primavera provides several white papers that detail aspects of Burn Down:

- Burn Down Detail Data Flow:  
[http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown\\_Details\\_DataFlow.pdf](http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown_Details_DataFlow.pdf)
  - Burn Down Units Details:  
[http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown\\_Details\\_Units.pdf](http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown_Details_Units.pdf)
  - Burn Down Counts Details:  
[http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown\\_Details\\_Counts.pdf](http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/WhitePapers/BurnDown_Details_Counts.pdf)
- 

## Creating Project UDFs for Burn Down Subject Areas

Only P6 EPPM projects can be manually included to take advantage of the Oracle Primavera Burn Down tables and functionality. This section describes how to create and configure the necessary P6 EPPM project level user-defined fields (UDFs) that the STARETL process needs to include project(s) in Burn Down.


To create the project UDFs, complete the following steps:

- 1) Log in to P6 EPPM with a user account that has the privilege to change enterprise data (for example, admin).
- 2) Click the **Administer** ▼ menu and select **Enterprise Data**.
- 3) On the **Enterprise Data** page, expand **Projects** and select **Project UDFs**.
- 4) On the Project UDFs page:
  - a. Add a **sys\_workdown** UDF with a data type of **Text**.
  - b. Add a **sys\_workdown\_date** UDF with a data type of **Start Date**.

### Selecting the Project for the Burn Down Subject Area

For a project to be included in the Burn Down tables and subject area, you must configure specific project UDF and History Level settings in P6.

To select which P6 EPPM project will be included in Burn Down tables and metrics, complete the following steps:

- 1) Log in to P6 EPPM.
- 2) In P6, click **Projects**.
- 3) On the **Projects** navigation bar, click **EPS**.
- 4) On the **EPS** page:
  - a. Select a project.
  - b. Click the **Actions** ▼ menu and select  **Set Project Preferences**.
- 5) In the **Project Preferences** dialog box, in the **Project Preferences** pane, click **Analytics**.
- 6) On the **Analytics** page, click the **History Level** drop-down and select **Activity**.
- 7) In the **Project Preferences** dialog box, click **Save and Close**.
- 8) On the **Projects** navigation bar, click **EPS**.
- 9) On the **EPS** page, add the **sys\_workdown** and **sys\_workdown\_date** UDF columns to the page.
- 10) For the projects you want to add to the Burn Down subject area:
  - a. Enter `project` in the **sys\_workdown** column.
  - b. Enter a date value (for example, 09/30/2015) in the **sys\_workdown\_date** column. This value is used as the snapshot date for comparison to actual project values. If no value is entered here, the **Project Start Date** is used.

---

**Note:** The date used for the initial Burn Down data capture is one day before the date entered for this UDF. For example, if the **sys\_workdown\_date** is 09/30/2015, then the STARETL process uses 09/29/2015 for the Burn Down comparison.

---

### Burn Down and Work Planning with the STARETL Process

After adding P6 EPPM projects for inclusion in the Burn Down and/or Work Planning subject areas, it is important that the date/time period specified in P6 EPPM under **Administer, Application Settings, Services** in the **Publication Period** section is later than the latest project finish for ALL project(s) that will be included for Burn Down and/or Work Planning. For example, in P6 EPPM Publication Services settings, if you specify a start date of October 1, 2015 and the finish date is current date plus setting is two years, the finish date for all of the Burn Down/Work Planning project(s) must have a finish date before September 30, 2017. If a project extends past the finish date setting in the publication services settings, the Burn Down/Work Planning portion of the STARETL process generates an error.

---

**Note:** Setting a finish date range that is too long will affect the STARETL process run time. Each day the publication services are run, the finish date range also extends by one day.

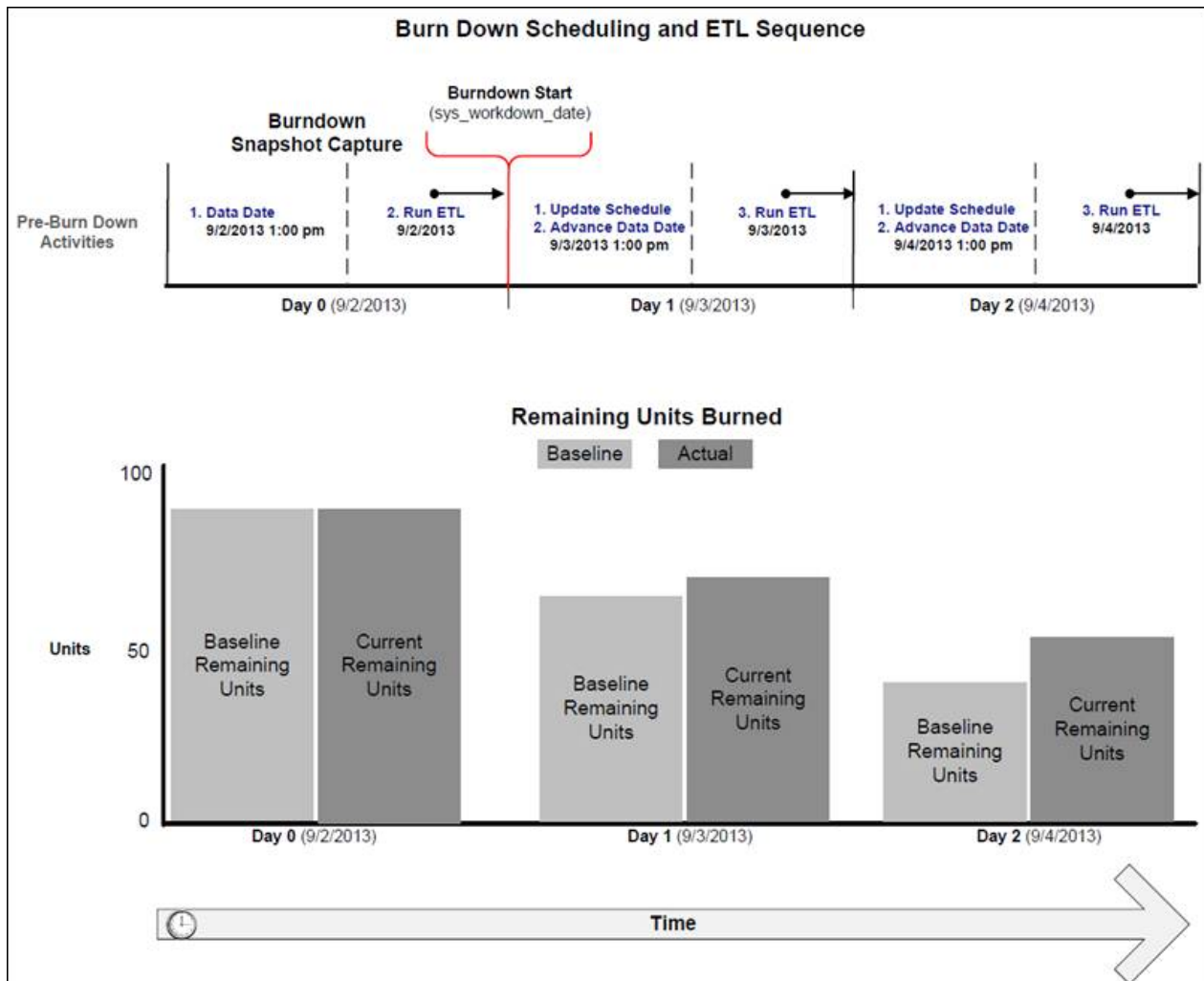
---



### Scheduling a Burn Down Project

A project can have activities scheduled and completed before a burn down begins. This gives users the flexibility to begin the project burn down on the date specified in the **sys\_workdown\_date** UDF rather than the **Project Start Date**.

In a Burn Down project, the initial snapshot of the project's activities and assignments is taken the day before the date entered in the **sys\_workdown\_date** UDF. This snapshot is used as a baseline to compare against actual values. For example, the **Baseline Remaining Units Burned** can be compared to the **Remaining Units Burned**. The STARETL process must be run one day before the **sys\_workdown\_date** (or the **Project Start Date** if this UDF is not used) to capture this initial snapshot.



### About the STARETL Process and Burn Down Metrics

When using Burn Down Metrics, you must update the schedule and run the STARETL process. Each daily STARETL process updates two sets of daily metrics:

- ▶ **Metrics for 'Today':** All work completed today through the latest schedule update and data date change is recorded as work completed for the current date when the STARETL process occurs.
- ▶ **Metrics for 'Yesterday':** Since the data from yesterday is only current through the latest schedule update and data date change, any additional work completed yesterday but AFTER the update is now added to the daily metrics for 'yesterday'.

For example, a project is updated at 6pm daily and the STARETL process is then executed. The next day, these become metrics for 'yesterday' and initially reflect work only through 6pm yesterday. When the STARETL process is executed today, any additional work completed between 6pm and midnight is now included under the metrics for 'yesterday'.

### Calculating Metrics in the Burn Down Subject Area

To capture daily trending information, complete the following steps each day to calculate the metrics in the Burn Down subject area:

- 1) Update the status of activities in the projects you configured in P6 to be included in the Burn Down subject area. For example, update the Actual and Remaining Units and which activities are completed.
- 2) Adjust the data date to correspond to the latest status update.
- 3) Run the STARETL process.

---

**Note:** The STARETL run must occur within each calendar date to properly capture daily metrics.

---

### Using Work Planning for P6 EPPM Data

Primavera Analytics supports Work Planning for P6 EPPM data. Work Planning is a method of tracking how work is progressing based on a set of user-determined points in time. Similar to Burn Down, Work Planning also uses project-level user-defined fields (UDFs) to select the P6 EPPM projects included in the Work Planning calculations and metrics and also the point in time you want to use for the comparison.

### Creating Project UDFs for Work Planning Subject Areas

You can manually include P6 EPPM projects to take advantage of the Work Planning tables and functionality.


You must create and configure the necessary P6 EPPM project-level user-defined fields (UDFs) that the STARETL process needs to include projects in Work Planning. To do this, complete the following steps:

- 1) Log in to P6 EPPM.
- 2) Click the **Administer** ▼ menu and select **Enterprise Data**.
- 3) On the **Enterprise Data** page, expand **Projects** and select **Project UDFs**.
- 4) On the **Project UDFs** page:
  - a. Add a **sys\_workprocess** UDF with a data type of **Text**.
  - b. Add a **sys\_scope\_freeze** UDF with a data type of **Text**.
  - c. Add a **sys\_schedule\_freeze** UDF with a data type of **Text**.

## Selecting a Project for the Work Planning Subject Area

The Work Planning subject area is designed for ongoing project work typical of routine and online maintenance projects. In these projects, planning metrics are tracked week over week and workweek metrics are tracked daily. There are specific Project UDF and History Level settings required in P6 to include a project in the Work Planning subject area.

Complete the following steps to select the P6 EPPM projects for the work planning subject area:

- 1) Log in to P6 EPPM.
- 2) In P6, click **Projects**.
- 3) On the **Projects** navigation bar, click **EPS**.
- 4) On the **EPS** page:
  - a. Select a project.
  - b. Click the **Actions** ▼ menu and select  **Set Project Preferences**.
- 5) In the **Project Preferences** dialog box:
  - a. Ensure the project is configured for publication services.
    1. Click **Services** in the **Project Preferences** pane.
    2. On the **Services** page, select the **Enable Publication** option in the **Publication** pane.
  - b. Configure the project's History Level setting.
    1. Click **Analytics** in the **Project Preferences** pane.
    2. On the **Analytics** page, select **Activity** from the **History Level** drop-down list.
  - c. Click **Save and Close**.
- 6) On the **Projects** navigation bar, click **EPS**.
- 7) On the **EPS** page, add the **sys\_workprocess**, **sys\_scope\_freeze**, and **sys\_schedule\_freeze** UDF columns to the page.
- 8) For the projects you want to add to the Work Planning subject area:
  - a. Enter `workweek` in the **sys\_workprocess** column.

---

**Note:** Use the format  $T- (where  $<x>$  equals the number of weeks prior to scope freeze and schedule freeze) must be followed exactly when entering the **sys_scope_freeze** and **sys_schedule_freeze** UDF values.$

---

- b. Enter a value in the **sys\_scope\_freeze** column. This is a relative value for each week in a project's schedule. For example, if you enter  $T-2w$ , scope freeze for each week in a project is calculated as two weeks prior to the Planned Start Date of that week. Scope freeze metrics, such as Scope Freeze New or Scope Freeze Lost, are captured for each week in a project schedule from each week's calculated scope freeze date up to and including its completion.
- c. Enter a value in the **sys\_schedule\_freeze** column. This is a relative value for each week in a project's schedule. For example, if you enter  $T-1w$ , schedule freeze for each week in a project is calculated as one week prior to the Planned Start Date of that week. Schedule freeze metrics, such as Schedule Freeze New or Schedule Freeze Lost, are captured for each week in a project schedule from each week's calculated schedule freeze date up to and including its completion.

## Scheduling a Work Planning Project

Scope freeze, schedule freeze, and actual metrics are captured for each week of planned work in a project that has been opted into the Work Planning subject area. Each individual week in the schedule will have these metrics captured leading up to that week's execution, allowing users to monitor their planning performance on a weekly basis for an upcoming week of work.

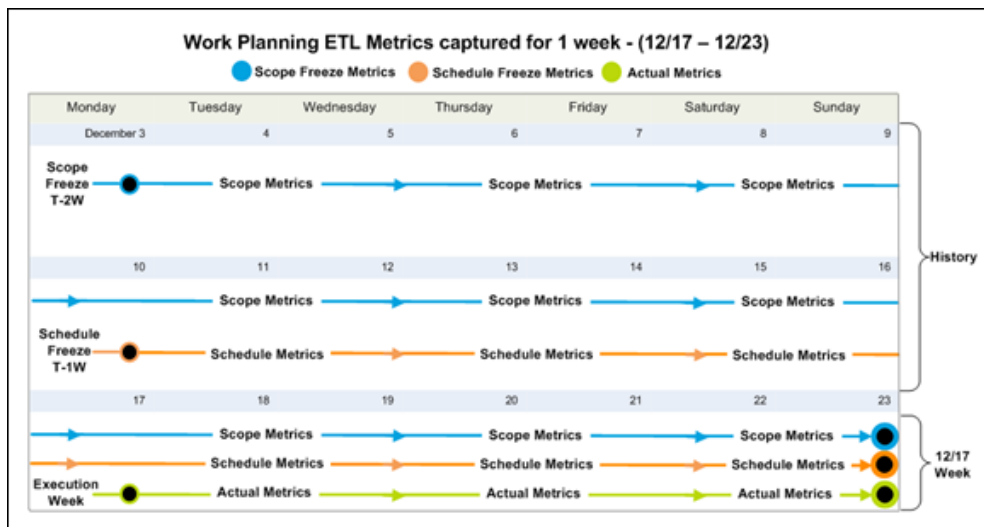
The **sys\_scope\_freeze** and **sys\_schedule\_freeze** UDFs control the amount of history or the number of weeks these metrics capture for each individual week leading up to the execution week.

The diagram below illustrates how the ETL process would capture Work Planning metrics for the week 12/17/2012 to 12/23/2012 given the following P6 settings:

- ▶ The **sys\_scope\_freeze** equals **T-2w**
- ▶ The **sys\_schedule\_freeze** equals **T-1w**
- ▶ The **Starting Day of Week** equals **Monday** (this is set in the P6 Application Settings)

In this scenario, the **Scope Freeze** for the week starting on Monday 12/17/2012 occurs two weeks prior (T-2w) to that week's planned start date. **Schedule Freeze** occurs one week prior (T-1w) to that week's planned start date. Daily Actual Start and Finish metrics are captured throughout the week.

Once the STARETL process has run on these respective freeze dates, any changes in the schedule for an upcoming week (such as adds, deletes, or planned date changes) are recorded the next time the STARETL process runs.



## Using Graded Approach to Schedule Adherence

Graded approach to schedule adherence is a method for tracking adherence using four distinct levels of work scheduling (A, B, C, and D).

The levels of work scheduling are:

- ▶ **A (Hourly):** Used when you require the most control, adherence, and management oversight. Reasons include risk (probability safety analysis/risk assessment), personnel safety, or other significant concerns. Users must finish Level A activities within one hour of the target planned finish date.
- ▶ **B (Daily):** Used for work requiring multi-discipline coordination, significant tagouts, or risk significant work. Users must finish Level B activities on the same day as the target planned finish date.
- ▶ **C (Weekly):** Used for non-risk significant and routine work that does not require support from other work groups. Users must finish Level C activities within the week of the target planned finish date.
- ▶ **D (No Tracking):** Used for housekeeping, shop work, and other types of work that have no impact to the plant. Level D activities are considered "fill-in" work and are not tracked for schedule adherence.

To configure graded schedule adherence:

- 1) Ensure you have enabled a project for Work Process:  
The `sys_workprocess=WORKWEEK`, `sys_scope_freeze`, and `sys_schedule_freeze` UDFs are populated and **History Level** are set to **Activity**.
- 2) Ensure history exists for the project as of the scheduled freeze date and T-0 baseline date for the week the STARETL process will run.
- 3) Code activities using an Activity Code or UDF to identify the adherence grade (A, B, C, D).  
For example, in the sample data, Activity Code 11 (Schedule Adherence Priority) is used.

---

**Note:** Ensure the Activity Code or UDF used is set up correctly both in the Primavera Data Warehouse database and the repository definition.

---

During T-0 for a given week when you run the STARETL process, the Baseline Planned Finish Date (as of T-0) and the Schedule Freeze Planned Finish Date (as of schedule freeze UDF) for the activities will be captured. You can use these dates along with the assigned adherence grade to calculate the graded schedule adherence in Primavera Analytics.

## Using Location Data

Both P6 EPPM and Primavera Unifier can store location information for projects. In addition, P6 EPPM can also store location information for activities and resources. Primavera Analytics can create intelligent analysis to evaluate measures using the geographical location data entered in P6 EPPM and Primavera Unifier. You will need spatial boundary data and maps. Primavera Analytics comes with access to Oracle eLocation services. Oracle eLocation service is a cloud-based map data service that provides mapping, geocoding, and routing capabilities. For more information, see the Oracle Business Intelligence documentation on mapping and spatial information.

### Entering P6 EPPM Data for Mapping

P6 EPPM supports the ability to enter location data at the dictionary level that can be assigned to Projects, Activity, and Resources and then extracted, transformed, and loaded into the Primavera Data Warehouse for use in Oracle Business Intelligence analysis.

To create location data in P6 EPPM, complete the following steps:

- 1) Log in to P6 EPPM with an account that has the privilege to change enterprise data (for example, admin).
- 2) Click the **Administer** ▼ menu and select **Enterprise Data**.
- 3) In the **Enterprise Data** pane, expand Global and select **Locations**.
- 4) Enter the location data as appropriate for your specific needs.
- 5) Assign locations data to projects, activities, and resources as needed.

---

**Note:** See the P6 help for information about entering and assigning location data.

---

- 6) After all of the location data is entered and assigned where appropriate for your environment, run all of the Global publication services to ensure that the data in the publication tables is up to date. After Publication Services have run to successful completion, run the STARETL process to extract, transform, and load the data from P6 EPPM to the Primavera Data Warehouse.

---

### Preparing Primavera Unifier Data for Mapping

There are some additional steps required to integrate Primavera Unifier location data with map data. The Primavera Unifier staging tables store columns for State and Country name (for example, United States), however some of the MapViewer layers rely on State and Country code for the mappings. Run the included script at the end of the STARETL process to ensure that the State Code and Country Code columns are populated correctly for use with map data.

To enter location data in Primavera Unifier:

- 1) Log in to Primavera Unifier.
- 2) Assign locations to your projects.
- 3) From the **Company Admin** screen, select the **Analytics** module.
- 4) In the Shell mapping configuration, ensure that the **Country** and **State** columns are mapped to values that represent country and state codes rather than names.

After you have entered and assigned all of the location data where appropriate for your environment, run all of the Publication Services to ensure that the data in the publication tables is current. After Publication Services have run successfully, run the STARETL process to extract, transform, and load the data from Primavera Unifier to the Primavera Data Warehouse.

## Primavera Gateway Setup Tasks

---

Primavera Gateway is an application that facilitates sharing and synchronizing project and resource information data between Primavera applications and other enterprise applications. By creating providers, which are used as a channel to connect with the corresponding software application, Primavera Gateway enables you to combine management and scheduling functionality of Primavera applications with other enterprise software. Providers can reside on either side of a data flow connecting a source application with a destination application.

This chapter provides guidance for planning integrations between:

- ▶ P6 EPPM and Primavera Unifier
- ▶ P6 EPPM and Oracle Primavera Prime

Also in this chapter is a section that includes the business objects for each product.

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## Sharing Data between P6 and Primavera Unifier

Data can be exchanged between P6 and Unifier directly from the P6 EPPM application user interface. For more details on how this is accomplished, refer to the P6 EPPM user documentation. Alternatively, a Gateway administration user can also set up a data exchange flow through the Gateway user interface. This guide describes the available business flows, associated field mapping templates, synchronizations, source and destination parameters for a data exchange flow that can be setup in the Gateway user interface.

The following providers are delivered with Primavera Gateway:

- ▶ Unifier provider  
The Unifier provider enables you to get data for the cost modules, Cost Sheet, Cash Flow, and earned value data from P6 application. P6 schedules activity data can also be exchanged between the two applications. It also enables exchange of P6 schedules' activity data between the two applications (data can be sent from P6 and returned back to P6) Primavera Gateway supports this integration with the P6 provider.
- ▶ P6 provider  
The P6 provider enables you to share activity data and summarized schedule data for duration based schedules, resource loaded schedules and cost loaded schedules with Primavera Unifier. Primavera Gateway supports this integration with the Unifier provider.

Integrating P6 with the Unifier provider enables sharing of cost details for projects scheduled in P6 EPPM. The Gateway application facilitates the integration process.

This chapter describes how to setup the environment to enable data exchange between P6 and the Unifier providers.

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### Installation Prerequisites for Integration

To set up an environment for data exchange through Primavera Gateway, you should have access to the following applications:

- ▶ Primavera Unifier
- ▶ P6 EPPM
- ▶ Primavera Gateway selecting the Unifier and P6 providers.

For integration purposes the following must be set:

- ▶ Only existing projects in P6 and Unifier can be integrated.
- ▶ The projects which need to be linked must have the same **Project Number** and **Project ID** in the respective products.

## Setting up the Integration Environment

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### Configuring the P6 User Interface

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To set up the integration environment, in the P6 EPPM user interface, enter the following information in the **Gateway Settings** tab of the P6 EPPM Administer Application Settings:

- ▶ The Primavera Gateway **API URL** and valid credentials to enable P6 to connect to Unifier through Gateway. For example, *http://<hostName>:<portNumber>/gateway*
- ▶ The P6 deployment name created in Primavera Gateway for the P6 instance
- ▶ The synchronizations to be executed to exchange data with Unifier.
- ▶ The **Project Number** and **Project ID** must be identical in P6 EPPM and Primavera Unifier applications.
- ▶ Before sending any project data from P6 ensure that the **Scheduled Type** is selected for that project.
- ▶ The project that needs to be integrated in Unifier must be linked to a P6 project. For more information on linking projects, see the relevant application's documentation.

### Configuring the Unifier User Interface

---

To set up the integration, enter the following information in the Primavera Unifier user interface:

For Activity Sheet integration, specify the following information on the **Integration Settings** screen in the Unifier user interface:

- ▶ In the **API URL** field, enter the URL to access the Gateway application. For example, *<host>:<port>/gateway*
- ▶ In the **User Name** field, enter the name of the Gateway administrator.
- ▶ In the **Password** field, enter the administrator's password for the Primavera Gateway application.
- ▶ Select **Test Connection** to ensure connectivity with Primavera Gateway.
- ▶ In the **Unifier Deployment** enter a short name for the Unifier deployment.
- ▶ In the **Import Synchronization** field, select the default import synchronization to be applied in Unifier.
- ▶ In the **Export Synchronization** field, select the default export synchronization to be applied in Unifier.

For Summary Sheet integration, ensure that the **Project Number** and **Project ID** are identical in P6 EPPM and Primavera Unifier applications.

---

## Configuring the Primavera Gateway User Interface

This section describes how to configure the Gateway user interface.

### Adding an Application Deployment Connection

To move data between applications, you must first add application deployment connections for Primavera Unifier and P6 EPPM so Primavera Gateway knows where to retrieve and send information.

To add an application deployment connection you must specify the **Endpoint URL**:

- 1) Login to Primavera Gateway with administration credentials.
- 2) Select **Configuration**.
- 3) Select **Deployments**.
- 4) Select **Add**.
- 5) Follow the steps in the **Add Deployment** wizard to name the deployment and set its parameters. Select **Save**.

### Using Business Flows Delivered in Gateway

The following flow types are available to transfer data between Prime and P6:

- ▶ Master Data Flow Type
- ▶ Project Data Flow Type

### Exporting Project Data from P6

To export project data from P6 to Primavera Unifier, you can use the following default business flows and synchronizations in the Gateway user interface. You can also create your own business flows and synchronizations if these don't fit your needs.

---

**Note:** All Gateway settings described below will be overridden by the flow invoked from the P6 user interface.

---

### Default Business Flows

Use the **Send to Primavera Unifier** default business flow and synchronization to export the following objects from P6 with the appropriate default field mapping template after the name:

- ▶ Export a **Schedule Type** attribute for a project to link the projects in the two application using the field mapping template, "Sync P6 and Unifier Projects"

---

**Note:** The **Sync P6 and Unifier Projects** is a mandatory template to include in the **Send to Primavera Unifier** business flow. All other templates are optional depending on what data is being sent to Unifier.

---

- ▶ Export a **WBS** object using the field mapping template, "Send WBS Hierarchy to Unifier"
- ▶ Export a **CBSDurationSummary** object using the field mapping template, "Send CBS Summary Data to Unifier"
- ▶ Export a **CBSResourceSpread** object using the field mapping template, "Send Resource Summary and Spread Data to Unifier"

- ▶ Export a **CBSEXPENSESPREAD** object using the field mapping template, "Send Expense Summary and Spread Data to Unifier"

Use the **Get Activity Data from P6** default business flow and synchronization to export an Activity object from P6 with the appropriate default field mapping template after the name:

- ▶ Export an **Activity** object to create a new Activity sheet using the field mapping template, "Create Activity Sheet from P6" or update an existing Activity sheet using the field mapping template, "Update Activity Sheet from P6".

### Source Application Default Settings

The following source parameters are available by default. Users with the Gateway administrator roles can access and view all hidden parameters. You can also change these settings.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from a non-administration users.

---

#### P6 Filter

Use this setting to specify Projects with specific fields and values to be exported from P6 EPPM. Select **Add row** to specify additional values and export multiple project IDs from P6.

#### Spread Period Type

Use this setting to select the default spread period type to be exported P6 EPPM. Options include, Week, Month, Day, and Financial Period.

#### Activity Filter

Use this setting to specify Activities with specific fields and values to be exported from P6 EPPM. Select **Add row** to specify additional values and export multiple activities from P6.

#### Resource Assignment Filter

Use this setting to specify ResourceAssignments with specific fields and values to be exported from P6 EPPM. Select **Add row** to specify additional values and export multiple resource assignments from P6.

#### Baseline Ids

Use this setting to specify multiple baseline IDs to be exported from P6 EPPM as comma-separated values.

#### Delete Data that no longer exists in Primavera?

Use this setting to determine whether data that no longer exists in P6 is deleted.

#### Summarize project(s) before synchronization?

Use this setting to determine whether to schedule projects before a synchronization.

#### Synchronize WBS Hierarchy

Use this setting to determine whether to synchronize a complete, partial, or a leveled WBS hierarchy. The P6 setting for WBS will override the setting in Gateway.

## Destination Application Default Settings

None

## Importing Project Data to P6

To import project data from Primavera Unifier to P6, you can use the following default templates in the Gateway user interface. You can also create your own if these templates don't fit your needs.

## Default Business Flows

The following business flows are available:

- ▶ Use the **Update from Primavera Unifier** default business flow and synchronization to import CBS codes from Primavera Unifier using the field mapping template, "Pull CBS Codes from Unifier".
- ▶ Use the **Send Activity data to P6** business flow and synchronization to import an activity from Primavera Unifier using the field mapping template, "Send Activity data to P6".

---

**Note:** All Gateway settings described below will be overridden by the flow invoked from the P6 user interface.

---

## Source Application Default Settings

The following source parameters are available by default. Users with the Gateway administrator roles can access and view all hidden parameters. You can also change these settings.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from a non-administration users.

---

## Unifier Project Filter (Optional)

Use this setting to filter Unifier projects by objects, fields, and values to be imported from Primavera Unifier. Select **Add row** to specify additional values and export multiple project IDs from Unifier.

## Destination Application Default Settings

The following destination application parameters are available by default. Users with Gateway administrator roles can access and view all hidden parameters. You can also change these settings.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from non-administration users.

---

## EPS Location

Use this setting to define the EPS node where the projects are located in P6.

## Resource Destination

Use this setting to define the resource ID where the imported resources from Unifier are to be created in P6. Enter the location in the destination provider where the resource object is to be created.

**Role Destination**

Enter the location in the destination provider where the resource object is to be created.

**Calculate Cost from Units**

Use this setting to determine whether to calculate costs from the units.

**Auto Compute Actuals**

Use this setting to determine whether the actuals are to be auto-computed.

**Delete data that no longer exists in 3rd party application?**

Use this setting to determine whether data that no longer exists in a third-party application is deleted.

**Schedule project(s) after synchronization?**

Use this setting to determine whether to schedule projects after a synchronization.

**Summarize project(s) after synchronization?**

Use this setting to determine whether to summarize projects after a synchronization.

**Save data to P6 if there are errors**

Use this setting to determine whether to save the data in P6 although errors were encountered during the import.

**Synchronize one project at a time**

Use this setting to determine whether to synchronize one project at a time.

## Supported Field Mapping Templates

The following tables show field mappings supported in each field mapping template:

**Note:** If you link the P6 and Unifier projects using the `uuu_int_p6_project_id` field, then if you update the **Project ID** field in P6, you must manually update the **P6 Project ID** field (`uuu_p6_project_id`) in the corresponding Unifier shell.

### Sync P6 and Unifier Projects

This is a mandatory export project template which must be included in the business flow to export summary data from P6 to Unifier. However, this template is not mandatory for Send Activity data from P6 to Unifier. Use this template to establish a link between a Unifier and P6 projects. This template creates a new Activity Sheet in Unifier projects.

P6	Primavera Unifier
ID	ProjectNumber
Name	ProjectName
ProjectScheduleType	uuu_int_schedule_type

### Create Activity Sheet from P6

Use this field mapping template in an export project as well as an import project business flow to create an activity data sheet from P6.

**Notes:** With editing data mapping templates in Primavera Gateway:

- To map Unifier elements to Activity Sheet attributes, ensure that the data types of P6 Activity elements match the data definition of Unifier activity attributes.
- To map an Indicator type field from Unifier to a P6 UDF, ensure you specify the data type as String.

<b>P6</b>	<b>Unifier</b>
Id	uuu_P6ActivityId
Name	uuu_P6ActivityName
WBSCode	uuu_P6WBSCode
WBSName	uuu_P6WBSName
WBSPath	uuu_P6WBSPath
Status	uuu_P6ActivityStatus
Type	uuu_P6ActivityType
PercentComplete	uuu_P6PercentComplete
PlannedTotalCost	uuu_P6PlannedTotalCost
ActualTotalCost	uuu_P6ActualTotalCost
AtCompletionTotalCost	uuu_P6AtCompletionTotalCost
RemainingTotalCost	uuu_P6RemainingTotalCost
PlannedStartDate	uuu_P6PlannedStart
PlannedFinishDate	uuu_P6PlannedFinish
ActualStartDate	uuu_P6ActualStart
ActualFinishDate	uuu_P6ActualFinish
StartDate	uuu_P6Start
FinishDate	uuu_P6Finish
RemainingEarlyStartDate	uuu_P6RemainingEarlyStart
RemainingEarlyFinishDate	uuu_P6RemainingEarlyFinish
PlannedDuration	uuu_P6PlannedDuration
ActualDuration	uuu_P6ActualDuration
AtCompletionDuration	uuu_P6AtCompletionDuration
RemainingDuration	uuu_P6RemainingDuration



## Update Activity Sheet from P6

Use this export project field mapping template to update P6 activity data elements in Unifier from P6.

**Note:** Do *not* include fields that are common to this template and the 'Send Activity Data to P6' template. Otherwise incorrect data will be moved across applications.

P6	Unifier
Id	uuu_P6ActivityId
Name	uuu_P6ActivityName
WBSCode	uuu_P6WBSCode
WBSName	uuu_P6WBSName
WBSPath	uuu_P6WBSPath
Status	uuu_P6ActivityStatus
Type	uuu_P6ActivityType
PercentComplete	uuu_P6PercentComplete
PlannedTotalCost	uuu_P6PlannedTotalCost
ActualTotalCost	uuu_P6ActualTotalCost
AtCompletionTotalCost	uuu_P6AtCompletionTotalCost
RemainingTotalCost	uuu_P6RemainingTotalCost
PlannedStartDate	uuu_P6PlannedStart
PlannedFinishDate	uuu_P6PlannedFinish
StartDate	uuu_P6Start
FinishDate	uuu_P6Finish
RemainingEarlyStartDate	uuu_P6RemainingEarlyStart
RemainingEarlyFinishDate	uuu_P6RemainingEarlyFinish
PlannedDuration	uuu_P6PlannedDuration
ActualDuration	uuu_P6ActualDuration
AtCompletionDuration	uuu_P6AtCompletionDuration
RemainingDuration	uuu_P6RemainingDuration

### Send Activity Data to P6

Use this import project template to send activity data sheet to P6. This template maps fields of 'Activity Sheet Attributes' form to P6 'Activity' object which get updated in Unifier through business process records.

---

**Notes:**

- Do *not* include fields that are common to this template and the 'Update Activity Data from P6' template. Otherwise incorrect data will be moved across applications.
  - If an Activity Type in a schedule is a “Start Milestone”, then you cannot update the **Actual Finish Date** in P6. So, do not update the **Actual Finish Date** for this activity in Unifier and try to send it to P6. Otherwise, incorrect data will be moved between applications.
  - If an Activity Type in a schedule is a “Finish Milestone” then you cannot update the **Actual Start Date** in P6. So, do not update the **Actual Start Date** for this activity in Unifier and try to send it to P6. Otherwise, incorrect data will be moved between applications.
  - Project filter conditions must always be defined in the synchronization. If you define the condition in the business flow, instead of the synchronization, Gateway will not know which projects to send the data from.
- 

Unifier	P6
uuu_P6ActivityId	Id
uuu_P6ActualStart	ActualStartDate
uuu_P6ActualFinish	ActualFinishDate

### Send WBS Hierarchy to Unifier

Use this export project template to map P6 WBS attributes to Unifier CBS codes such that cost codes can get created in a Unifier Cost Sheet.

P6	Unifier
Code	Code
item	item
SequenceNumber	orderid

### Send CBS Summary Data to Unifier

Use this export project template for a Duration-based Schedule Type, to create or update the master as well as the baseline Summary Sheets in Unifier.

<b>From P6</b>	<b>To Unifier</b>
ProjectName	Title
BaselineType	BaselineType
DataDate	DataDate
SummaryPlannedStartDate	PlannedStart
SummaryPlannedFinishDate	PlannedFinish
SummaryActualStartDate	ActualStart
SummaryActualFinishDate	ActualFinish
SummaryRemainingStartDate	RemainingStart
SummaryRemainingFinishDate	RemainingFinish
SummaryPlannedDuration	PlannedDuration
SummaryRemainingDuration	RemainingDuration
SummaryActualDuration	ActualDuration
SummaryPercentComplete	PercentComplete

### Send Resource Summary and Spread Data to Unifier

Use this export project template for a Resource-loaded Schedule Type or a Cost-loaded Schedule Type to create or update Master as well as baseline Summary Sheets in Unifier using the Resource by CBS summary data from a P6 Schedule.

<b>P6</b>	<b>Unifier</b>
BaselineType	BaselineType
CurrencyId	currencyId
DataDate	DataDate
StartDate	StartDate
EndDate	EndDate
ProjectName	Title
ResourceId	uuu_role_id
ResourceName	uuu_role_name
ResourceType	uuu_role_type

<b>P6</b>	<b>Unifier</b>
UnitName	UnitName
UnitAbbreviation	uuu_role_uom
SummaryActualCost	SummaryActualCost
SummaryActualFinish	SummaryActualFinish
SummaryActualStart	SummaryActualStart
SummaryActualUnits	SummaryActualUnits
SummaryAtCompletionCost	SummaryAtCompletionCost
SummaryAtCompletionUnits	SummaryAtCompletionUnits
SummaryPlannedCost	SummaryPlannedCost
SummaryPlannedFinish	SummaryPlannedFinish
SummaryPlannedStart	SummaryPlannedStart
SummaryPlannedUnits	SummaryPlannedUnits
SummaryRemainingCost	SummaryRemainingCost
SummaryRemainingFinish	SummaryRemainingFinish
SummaryRemainingStart	SummaryRemainingStart
SummaryRemainingUnits	SummaryRemainingUnits
PlannedUnits	PlannedUnits
ActualUnits	ActualUnits
RemainingUnits	RemainingUnits
AtCompletionUnits	AtCompletionUnits
PlannedCost	PlannedCost
ActualCost	ActualCost
RemainingCost	RemainingCost
AtCompletionCost	AtCompletionCost

### Send Expense Summary and Spread Data to Unifier

This is a project data field-mapping template for a Resource-loaded Schedule Type or a Cost-loaded Schedule Type to create or update the master as well as baseline summary sheets in Unifier using the Expense by CBS summary data from the P6 schedule.

<b>P6</b>	<b>Unifier</b>
BaselineType	BaselineType
DataDate	DataDate
StartDate	StartDate
EndDate	EndDate
ProjectName	Title
ExpenseCategoryName	ExpenseCategory
SummaryActualCost	SummaryActualCost
SummaryActualUnits	SummaryActualUnits
SummaryAtCompletionCost	SummaryAtCompletionCost
SummaryAtCompletionUnits	SummaryAtCompletionUnits
SummaryPlannedCost	SummaryPlannedCost
SummaryPlannedUnits	SummaryPlannedUnits
SummaryRemainingCost	SummaryRemainingCost
SummaryRemainingUnits	SummaryRemainingUnits
PlannedUnits	PlannedUnits
ActualUnits	ActualUnits
RemainingUnits	RemainingUnits
AtCompletionUnits	AtCompletionUnits
PlannedCost	PlannedCost
ActualCost	ActualCost
RemainingCost	RemainingCost
AtCompletionCost	AtCompletionCost

## Adding User-Defined Fields (UDFs) and Codes to P6 EPPM

You have the option to add User-Defined Fields (UDFs) and codes to P6 EPPM and to prepare the P6 EPPM database for synchronizing the data.

For example, if your application has UDFs or codes that P6 EPPM does not have, you can add these UDFs or codes.

## Adding P6 User-Defined Fields and Codes to Providers

You can have additional P6 UDFs and codes available for synchronization and field mapping templates for a selected provider (for example, Primavera Unifier).

---

**Note:** If you want to add UDFs or codes to your providers, submit a Service Request to My Oracle Support.

---

## Sharing Data Between Oracle Primavera Prime and P6 EPPM

Integrating Oracle Primavera Prime with P6 EPPM enables you to share data for the following purposes:

- ▶ Project details related to budget, costs, schedule, and scope
- ▶ Perform quantitative risk analysis in Prime and send the data to P6
- ▶ Resource and Role information can be imported to Oracle Primavera Prime from P6

The Gateway integration tool facilitates the integration process. Data can be shared between the two applications using any of the following workflows:

- ▶ Using the P6 EPPM or the Oracle Primavera Prime user interface  
You can create projects in P6 EPPM and send the data to the Oracle Primavera Prime application from the P6 EPPM user interface, and vice-versa.  
For more details refer to the P6 EPPM online help for sending P6 EPPM data to Oracle Primavera Prime.
- ▶ Using the Primavera Gateway user interface  
You can log in to the user interface as a Gateway administrator and set up and schedule data synchronization jobs between the two applications. For more details, refer to the Primavera Gateway online help.

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## Configuring the Oracle Primavera Prime User Interface

To set up the integration environment, specify the default synchronizations that are to be executed in the **Primavera P6 Integration** section of the **Application Settings** page in the Oracle Primavera Prime interface.

The fields include:

- ▶ **Send Projects to P6**
- ▶ **Update Projects from P6**
- ▶ **Update Resources from P6**
- ▶ **Update Roles from P6**

## Configuring the P6 EPPM User Interface

To set up the integration environment, specify the following settings in the P6 EPPM user interface:

- ▶ Specify the information in the **Gateway Settings** tab of P6 EPPM Administer Application Settings.
- ▶ Setup the Workspace structure which will be sent from Prime to P6 using the Master Data flow. If the workspace is not created in Prime, you can alternatively specify the workspace location as a P6 Provider parameter value in Gateway.

## Using Business Flows Delivered in Gateway

The following flow types are available to transfer data between Prime and P6:

- ▶ Master Data Flow Type
- ▶ Project Data Flow Type

## Exporting Master Data

To export master data from P6 to Prime from the Primavera Gateway interface, you can use the following default template. You can also create your own if this template don't fit your needs.

### Default Business Flow

Use the "Create EPS Code in Prime" default business flow to export the following master data from P6 to Prime with the appropriate default field mapping templates after the name:

- ▶ Export an EPS business object using the field mapping template "Sync EPS to EPS Code".
- ▶ Export a Location business object using the field mapping template "P6 Location to Prime".
- ▶ Export an UDFType business object using the field mapping template "Synchronize UDF Fields from P6".

### Source Application Parameter Settings

The following source application parameters are available by default. Each business flow will have the same defaults for the parameters as follows. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway Administrator roles can access and change the parameter display settings and indicate if each is **Required**, **Optional**, or **Read-only**.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from non-administration users.

---

▶ **P6 UDF Type Filter**

When you choose to export an UDFType business object, use this parameter to determine which P6 UDF Types you will send to Oracle Primavera Prime. Options include: **Activity**, **Activity Expense**, **Project**, **Resource**, **Resource Assignment**, and **WBS**.

### Default Destination Application Parameter Settings

The following destination application parameters are available by default. Each business flow will have the same defaults for the parameters as follows. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway Administrator roles can access and change the parameter display settings and indicate if each is **Required**, **Optional**, or **Read-only**.

▶ **Workspace Location** (Required)

Use this setting to specify the default workspace and populate it in the default synchronization. If the value is set in Primavera Gateway, the Prime provider will check the **Prime Workspace** field value for the project being exported in the P6 user interface.

P6 must send all global data assigned to the project with the project flow and all of that global data must be assigned to the workspace to determine where the project will be created in Prime.

---

### Importing Master Data

To import data from Prime to P6, you can use the following default templates. You can also create your own if these templates don't fit your needs.

### Default Business Flows

Use the "Create Workspace Code in P6" default business flow with the following field mapping templates after the name:

- ▶ Import Project Code business objects using the field mapping, "Sync workspaces to Prime Workspace Code".
- ▶ Import Project Code Type business objects using the field mapping, "Create Project Code Type Fields in P6".

### Default Source Application Parameter Settings

Set the following parameter:

▶ **Delete data that no longer exists in 3rd party application?**

Use this setting to delete redundant data that no longer exists in any third-party application.



### Default Destination Application Parameter Settings

The following destination application parameters are available by default. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway administrator roles can access and view all hidden parameters. You can also change these settings, and indicate if each is **Required**, **Optional**, or **Read-only**.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from non-administration users.

---

- ▶ **Resource Destination**  
Use this setting to specify the location of the resource objects imported into P6.
- ▶ **Role Destination**  
Use this setting to specify the location of the role objects imported into P6.
- ▶ **Calculate Costs from Units**  
Use this setting to determine whether to calculate costs from the units.
- ▶ **Auto Compute Actuals**  
Use this setting to determine whether the actuals are to be auto-computed.
- ▶ **Save Data to P6 if there are errors**  
Use this setting to determine whether to save the imported data in P6 with errors.

## Exporting Project Data

To export data from P6 to Prime from the Primavera Gateway interface, you can use the following default templates. You can also create your own if these templates don't fit your needs.

### Default Business Flows

These are the names of the default business flows with the appropriate default field mapping template after the name:

- ▶ Create Projects from P6 to Prime with field mapping template "Create Projects from P6 to Prime".
- ▶ Synchronize Planned Budget and Plan Dates from P6 to Prime with field mapping template "Synchronize Planned Budget and Plan Dates from P6 to Prime".
- ▶ Synchronize Project Actual Cost and progress from P6 to Prime with field mapping template "Synchronize Project Actual Cost and progress from P6 to Prime".
- ▶ Sync P6 data to Prime with the following field mapping templates:
  - ▶ "Sync P6 data to Prime".
  - ▶ "Prime Project Actual Total Cost Spread from P6"
  - ▶ "Prime Project Planned Total Cost Spread from P6"
  - ▶ "Prime Project At Completion Total Cost Spread from P6"
  - ▶ "Sync activity data for risk for Prime"
  - ▶ "Sync calendar data for Prime"
  - ▶ "Sync relationship data for Prime"
  - ▶ "Sync Resource data for Prime"
  - ▶ "Sync risk data for Prime"
  - ▶ "Sync risk threshold data for Prime"
  - ▶ "Sync risk threshold level data for Prime"
  - ▶ "Sync risk impact data for Prime"
  - ▶ "Sync risk matrix data for Prime"
  - ▶ "Sync risk matrix score data for Prime"
  - ▶ "Sync risk matrix threshold data for Prime"
  - ▶ "Sync risk response plan data for Prime"
  - ▶ "Sync risk response action data for Prime"
  - ▶ "Sync risk response action impact data for Prime"
  - ▶ "Sync Role data for Prime"
  - ▶ "Sync activity risk assignment data for Prime"

## Default Source Application Parameter Settings

The following source application parameters are available by default. Each business flow will have the same defaults for the parameters as follows. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway Administrator roles can access and change the parameter display settings and indicate if each is **Required**, **Optional**, or **Read-only**.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from non-administration users.

---

▶ **P6 Filter** (Required)

Use this setting to determine which P6 projects you will send to Prime. Select **Add row** to specify additional values and export multiple **Project IDs**, **EPS IDs**, **Project Code Type Name**, or **Project Code Value** from P6.

▶ **Spread Period Type**

Use this setting to select the default spread period type to be exported P6 EPPM. Options include, **Week**, **Month**, **Day**, and **Financial Period**.

▶ **Activity Filter**

Use this setting to specify an Activity business object with specific fields and values to be exported from P6 EPPM. Select **Add row** to specify additional values and export multiple activities filtered by specific **Activity IDs**, **Activity Type**, **Activity Status**, or **Activity Code** from P6.

▶ **Resource Assignment Filter**

Use this setting to specify ResourceAssignment business objects with specific fields and values to be exported from P6 EPPM. Select **Add row** to specify additional values and export multiple resource assignments filtered by specific **Resource IDs** or **Resource Type** from P6.

▶ **Baseline Ids**

Use this setting to specify multiple baseline IDs to be exported from P6 EPPM as comma-separated values.

▶ **Delete Data that no longer exists in Primavera?**

Use this setting to determine whether data that no longer exists in P6 is deleted.

▶ **Summarize project(s) before synchronization?**

Use this setting to determine whether to schedule projects before a synchronization.

▶ **Synchronize WBS Hierarchy**

Use this setting to determine whether to synchronize a complete, partial, or a leveled WBS hierarchy. The P6 setting for WBS will override the setting in Gateway.

## Default Destination Application Parameter Settings

The following destination application parameters are available by default. Each business flow will have the same defaults for the parameters as follows. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway Administrator roles can access and change the parameter display settings and indicate if each is **Required**, **Optional**, or **Read-only**.

### ▶ **Workspace Location**

Use this setting to specify the default workspace and populate it in the default synchronization. If the value is set in Primavera Gateway, the Prime provider will check the **Prime Workspace** field value for the project being exported in the P6 user interface.

P6 must send all global data assigned to the project with the project flow and all of that global data must be assigned to the workspace where the project will be created in Prime.

---

## Importing Project Data

To import data from Prime to P6, you can use the following default templates. You can also create your own if these templates don't fit your needs.

---

**Note:** For Import Project flows to work, ensure that the **PlannedBudget** UDF of type Cost is included P6. Otherwise, create this UDF before running the flow.

---

## Default Business Flows

These are the names of the default business flows with the appropriate default field mapping template after the name:

- ▶ Use the "Create Projects from Prime to P6" business flow with the field mapping template "Create Projects from Prime to P6" to create projects in Prime.
- ▶ Use the "Update P6 Project with Prime data" business flow with the "Update P6 Project with Prime Data" field mapping template to update P6 projects with Prime data.
- ▶ Use the "Update P6 Project with Prime data" business flow with the "Update Activity Risk results for P6" field mapping template to update P6 projects with Prime data.
- ▶ Use the "Synchronize Proposed Budget and Plan Dates from Prime to P6" business flow with the field mapping template "Synchronize Proposed Budget and Plan Dates from Prime to P6" to synchronize proposed budget and plan date from Prime in P6.
- ▶ Use the "Synchronize Approved Budget and Plan Dates from Prime to P6" with the field mapping template "Synchronize Approved Budget and Plan Dates from Prime to P6" to synchronize approved budget and plan dates from Prime in P6.

### Default Source Application Parameter Setting

The following source application parameter is available by default. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway administrator roles can access and view all hidden parameters. You can also change these settings. and indicate if each is **Required**, **Optional**, or **Read-only**.

- ▶ **Prime Project Filter** (Required)

You can filter by Project ID, Workspace ID, Project Code Type Name, Project Code Value, and Project Status. You can use the P6 Provider filter parameter for reference during implementation.

### Default Destination Application Parameter Settings

The following destination application parameters are available by default. All parameters are set to **Hidden** in the Gateway user interface. Only users with Gateway administrator roles can access and view all hidden parameters. You can also change these settings. and indicate if each is **Required**, **Optional**, or **Read-only**.

---

**Note:** Unless specified in parentheses, all parameters listed below are hidden from non-administration users.

---

- ▶ **EPS Location** (Required)

You need to determine the default EPS node and populate it in the default synchronization for P6.

- ▶ **Resource Destination**

Use this setting to specify the location of the resource objects imported into P6.

- ▶ **Role Destination**

Use this setting to specify the location of the role objects imported into P6.

- ▶ **Calculate Costs from Units**

Use this setting to determine whether to calculate costs from the units.

- ▶ **Auto Compute Actuals**

Use this setting to determine whether the actuals are to be auto-computed.

- ▶ **Delete data that no longer exists in 3rd party application?**

Use this setting to determine whether data that no longer exists in a third-party application can be deleted.

- ▶ **Schedule project(s) after synchronization?**

Use this setting to determine whether to schedule projects after a synchronization.

- ▶ **Summarize project(s) after synchronization?**

Use this setting to determine whether to summarize projects after a synchronization.

- ▶ **Save Data to P6 if there are errors**

Use this setting to determine whether to save the imported data in P6 with errors.

- ▶ **Synchronize one project at a time**

Use this setting to determine whether to synchronize one project at a time.

## Supported Field Mapping Templates for Capital Plan Management

These tables show supported field mappings:

### Create Projects from Prime to P6

This is an import business flow that support projects starting in Prime then pushed to P6. This business flow will create a new project in the destination application with project data such as Status, Dates, Owner and Planned Budget.

**Note:** On the P6 side a UDF needs to be created to support the Prime planned budget value. This can be done in the P6 setup utility in Gateway.

From Prime	To P6
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	MustFinishByDate
Planned Budget	*Planned Budget (UDF)
IntegratedType	IntegratedType
ParentEPSId	ParentEPSId

### Create Projects from P6 to Prime

This is an export business flow that support projects starting P6 then pushed to Prime. This business flow will create a new project in the destination application with project data such as Status, Dates and Owner.

From P6	To Prime
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
PlannedStartDate	PlannedStartDate
MustFinishbyDate	PlannedFinishDate

### Synchronize Proposed Budget and Plan Dates from Prime to P6

This is an import business flow that supports a top down budgeting process where proposed budgets and dates are pulled from Oracle Primavera Prime and pushed to P6.

**Note:** If you want to use the change log functionality, you need to manually move the UDF value to the change log with a **Pending** status.

From Prime	To P6
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	MustFinishByDate
ProposedBudget	*ProposedBudget (UDF)

### Synchronize Planned Budget and Plan Dates from P6 to Prime

This is an export business flow that supports a bottom up budget process where planned budgets and dates are pulled from P6 and pushed to Oracle Primavera Prime.

From P6	To Prime
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
PlannedStartDate	PlannedStartDate
MustFinishByDate	PlannedFinishDate
SummaryPlannedCost	PlannedBudget

### Synchronize Approved Budget and Plan Dates from Prime to P6

This is an import business flow where approved budgets are pushed from Oracle Primavera Prime to P6.

From Prime	To P6
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	MustFinishByDate
ProposedBudget	*ProposedBudget (UDF)
CurrentApprovedBudget	CurrentBudget

### Synchronize Project Actual Cost and progress from P6 to Prime

Once the P6 project is in the execution phase, progress data such as Actual cost, schedule percent complete, and dates are transferred to Prime.

\*You can modify this template to support duration or performance percent complete.

From P6	To Prime
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
SummaryActualStartDate	ActualStartDate
SummaryActualFinishDate	ActualFinishDate
SummaryActualTotalCost	ActualCost
SummarySchedulePercentComplete	*PercentComplete



**Prime Project Planned Total Cost Spread from P6**

You should include all necessary spread field mappings, such as, period start/finish dates.

<b>From P6</b>	<b>To Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
Planned Total Cost	Planned Total Cost

**Prime Project Actual Total Cost Spread from P6**

You should include all necessary spread field mappings, such as, period start/finish dates. This is documented to just include the specific cost spread mapped from P6 to Oracle Primavera Prime.

<b>From P6</b>	<b>To Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
ActualTotalCost	ActualTotalCost

**Prime Project At Completion Total Cost Spread from P6**

All necessary spread field mappings must be included, such as period start/finish dates.

<b>From P6</b>	<b>To Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
AtCompletionTotalCost	AtCompletionTotalCost

## Supported Field Mapping Templates for All Prime Data

The following tables show field mappings supported in each field mapping template:

### Synchronize Project Actual Cost and Progress from P6 to Prime

Once the P6 project is in the execution phase, progress data such as Actual cost, schedule percent complete and dates are transferred to Prime.

<b>P6</b>	<b>Prime</b>
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
SummaryActualStartDate	ActualStart
SummaryActualFinishDate	ActualFinish
SummaryActualTotalCost	ActualCost
SummarySchedulePercentComplete	PercentComplete

### Synchronize Planned Budget and Plan Dates from P6 to Prime

This is an export project field mapping template that supports a bottom up budget process where planned budgets and dates are pulled from P6 and pushed to Prime.

<b>P6</b>	<b>Prime</b>
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
PlannedStartDate	PlannedStartDate
MustFinishByDate	PlannedFinishDate
PlannedFinishDate	PlannedFinishDate
SummaryPlannedCost	PlannedBudget

### Sync P6 Data to Prime

This is an export project field mapping template that supports projects starting in P6 then pushed to Prime. This field mapping template will create a new project in the destination application with project data such as Status, Dates, and Owner. For example, use this template for integrating cost, scope, and risk data.

<b>P6</b>	<b>Prime</b>
Id	ProjectId
Name	ProjectName
Description	Description
Status	Status
OwnerResourceId	Owner
PrimeWorkspace	PrimeWorkspace
PlannedStartDate	PlannedStartDate
MustFinishByDate	PlannedFinishDate
SummaryPlannedCost	PlannedBudget
SummaryActualTotalCost	ActualCost
SummaryAtCompletionTotalCost	AtCompletionCost
DataDate	DataDate
StartDate	StartDate
FinishDate	FinishDate
SummaryPlannedDuration	PlannedDuration
SummaryRemainingDuration	RemainingDuration
LocationName	LocationName
LocationObjectId	LocationCode
CalculateFloatBasedOnFinishDate	CalculateFloatBasedOnFinishDate
ComputeTotalFloatType	ComputeTotalFloatType
CriticalActivityFloatThreshold	CriticalActivityFloatThreshold
IgnoreOtherProjectRelationships	IgnoreOtherProjectRelationships
MakeOpenEndedActivitiesCritical	MakeOpenEndedActivitiesCritical
MaximumMultipleFloatPaths	MaximumMultipleFloatPaths
MultipleFloatPathsEnabled	MultipleFloatPathsEnabled

MultipleFloatPathsEndingActivityObjectId	MultipleFloatPathsEndingActivityObjectId
MultipleFloatPathsUseTotalFloat	MultipleFloatPathsUseTotalFloat
OutOfSequenceScheduleType	OutOfSequenceScheduleType
RelationshipLagCalendar	RelationshipLagCalendar
StartToStartLagCalculationType	StartToStartLagCalculationType
UseExpectedFinishDates	UseExpectedFinishDates
ActivityDefaultCalendarName	ActivityDefaultCalendarName
ActivityDefaultCalendarObjectId	ActivityDefaultCalendarObjectId
SummaryActualStartDate	ActualStart
SummaryActualFinishDate	ActualFinish
StrategicPriority	StrategicPriority
WebsiteURL	URL
SummaryStartDateVariance	VarianceStartDate
SummaryFinishDateVariance	VarianceFinishDate
NetPresentValue	NetPresentValue
PaybackPeriod	PaybackPeriod
ReturnOnInvestment	ReturnInvestment
AnnualDiscountRate	AnnualDiscountRate
SummaryPlannedValueByCost	PlannedValueCost
SummaryEarnedValueByCost	EarnedValueCost
SummaryScheduleVarianceByCost	ScheduleVariance
SummaryTotalCostVariance	CostVariance
SummarySchedulePerformanceIndexByCost	SchedulePerformanceIndex
SummaryCostPerformanceIndexByCost	CostPerformanceIndex
SummaryEstimateAtCompletionByCost	EstimateAtCompletionCost
SummaryEstimateToCompleteByCost	EstimateToCompletionCost

CriticalActivityPathType	CriticalActivityPathType
RiskMatrixName	RiskMatrixName
RiskMatrixObjectld	RiskMatrixCode
SummaryRemainingTotalCost	SummaryRemainingTotalCost

### Update P6 Project with Prime Data

This is an import project field mapping template that support projects starting Primethen pushed to P6. This field mapping template will create a new project in the destination application with project data such as Status, Dates, Owner and Planned Budget.

<b>Prime</b>	<b>P6</b>
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
PlannedBudget	PlannedBudget
StrategicPriority	StrategicPriority
LocationName	LocationName
URL	WebsiteURL
IntegratedType	IntegratedType
ParentEPSId	ParentEPSId

### Update Activity Risk Results For P6

This is an import project field mapping template that support projects starting Prime then pushed to P6.

<b>Prime</b>	<b>P6</b>
ProjectId	ProjectId
Id	Id
PostResponsePessimisticFinish	PostResponsePessimisticFinish
PostResponsePessimisticStart	PostResponsePessimisticStart
PreResponsePessimisticFinish	PreResponsePessimisticFinish
PreResponsePessimisticStart	PreResponsePessimisticStart

### Synchronize Approved Budget and Plan Dates from Prime to P6

This is an import business flow where approved budgets are pushed from Prime to P6.

<b>Prime</b>	<b>P6</b>
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
CurrentApprovedBudget	CurrentBudget

### Sync Proposed Budget and Plan Dates from Prime to P6

This is an import business flow that supports a top down budgeting process where proposed budgets and dates are pulled from Prime and pushed to P6.

Prime	P6
ProjectId	Id
ProjectName	Name
Description	Description
Status	Status
Owner	OwnerResourceId
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
ProposedBudget	ProposedBudget

### Sync Activity Data for Risk for Prime

This is an export project as well as an import project business flow supports synchronizing activity data for projects in P6 and Prime.

P6	Prime
Name	Name
ProjectId	ProjectId
Id	Id
CalendarName	CalendarName
CalendarObjectId	CalendarObjectId
CalendarObjectId	CalendarCode
MaximumDuration	MaximumDuration
MinimumDuration	MinimumDuration
MostLikelyDuration	MostLikelyDuration
PlannedDuration	PlannedDuration
EarlyStartDate	EarlyStartDate
ActualDuration	ActualDuration
RemainingDuration	RemainingDuration
SecondaryConstraintDate	SecondaryConstraintDate

SecondaryConstraintType	SecondaryConstraintType
Type	Type
EarlyFinishDate	EarlyFinishDate
StartDate	StartDate
FinishDate	FinishDate
LateStartDate	LateStartDate
LateFinishDate	LateFinishDate
ActualStartDate	ActualStartDate
ActualFinishDate	ActualFinishDate
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
PrimaryConstraintType	PrimaryConstraintType
PrimaryConstraintDate	PrimaryConstraintDate
Status	Status
IsStarred	IsStarred
RemainingEarlyStartDate	RemainingStart
RemainingEarlyFinishDate	RemainingFinish
RemainingLateStartDate	RemainingLateStart
RemainingLateFinishDate	RemainingLateFinish
SuspendDate	SuspendDate
ResumeDate	ResumeDate
PercentComplete	ActivityPercentComplete
WBSCode	WBSCode
IsWorkPackage	IsWorkPackage
ExpectedFinishDate	ExpectedFinishDate
DurationType	DurationType



**Sync Risk Matrix Score Data for Prime**

This is an export project field mapping template which synchronizes risk matrix score data pulled from P6 and pushed to Prime.

<b>P6</b>	<b>Prime</b>
RiskMatrixName	RiskMatrixName
RiskMatrixObjectId	RiskMatrixCode
ProbabilityThresholdLevel	ProbabilityThresholdLevel
Severity1	Severity1
Severity1Label	Severity1Label
Severity2	Severity2
Severity2Label	Severity2Label
Severity3	Severity3
Severity3Label	Severity3Label
Severity4	Severity4
Severity4Label	Severity4Label
Severity5	Severity5
Severity5Label	Severity5Label
Severity6	Severity6
Severity6Label	Severity6Label
Severity7	Severity7
Severity7Label	Severity7Label
Severity8	Severity8
Severity8Label	Severity8Label
Severity9	Severity9
Severity9Label	Severity9Label

### Sync risk response action data for Prime

This is an export project field mapping template that pulls risk response data from P6 into Prime.

<b>P6</b>	<b>Prime</b>
Id	Id
Name	Name
RiskResponsePlanId	RiskResponsePlanId
ActivityId	ActivityId
StartDate	StartDate
FinishDate	FinishDate
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
RemainingCost	RemainingCost
ActualCost	ActualCost
PlannedCost	PlannedCost
Status	Status
RiskId	RiskId
ProjectId	ProjectId

### Prime Project Planned Total Cost Spread from P6

This is an export project field mapping template that pulls planned total cost data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
PlannedTotalCost	PlannedTotalCost

**Prime Project Actual Total Cost Spread from P6**

This is an export project data field mapping template that pulls actual total cost data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
ActualTotalCost	ActualTotalCost

**Prime Project At Completion Total Cost Spread from P6**

This is an export project data field mapping template that pulls the At completion total cost data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
PeriodType	PeriodType
StartDate	StartDate
EndDate	EndDate
AtCompletionTotalCost	AtCompletionTotalCost

### Sync Risk Data for Prime

This is an export project data field mapping template that pulls the Response total cost data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Id	Id
ProjectId	ProjectId
Name	Name
Type	Type
Status	Status
Description	Description
Effect	Effect
Cause	Cause
Identified Date	IdentifiedDate
ResponseTotalCost	ResponseTotalCost

### Sync Activity Data for Risk for Prime

This is an export project data field mapping template that synchronizes activity risk data between P6 and Prime.

<b>P6</b>	<b>Prime</b>
Name	Name
ProjectId	ProjectId
Id	Id
CalendarName	CalendarName
CalendarObjectId	CalendarObjectId
CalendarObjectId	CalendarCode
MaximumDuration	MaximumDuration
MinimumDuration	MinimumDuration
MostLikelyDuration	MostLikelyDuration
PlannedDuration	PlannedDuration
EarlyStartDate	EarlyStartDate
ActualDuration	ActualDuration
RemainingDuration	RemainingDuration
SecondaryConstraintDate	SecondaryConstraintDate
SecondaryConstraintType	SecondaryConstraintType
Type	Type
EarlyFinishDate	EarlyFinishDate
StartDate	StartDate
FinishDate	FinishDate
LateStartDate	LateStartDate
LateFinishDate	LateFinishDate
ActualStartDate	ActualStartDate
ActualFinishDate	ActualFinishDate
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
PrimaryConstraintType	PrimaryConstraintType
PrimaryConstraintDate	PrimaryConstraintDate

Status	Status
IsStarred	IsStarred
RemainingEarlyStartDate	RemainingStart
RemainingEarlyFinishDate	RemainingFinish
RemainingLateStartDate	RemainingLateStart
RemainingLateFinishDate	RemainingLateFinish
SuspendDate	SuspendDate
ResumeDate	ResumeDate
PercentComplete	ActivityPercentComplete
WBSCode	WBSCode
IsWorkPackage	IsWorkPackage
ExpectedFinishDate	ExpectedFinishDate
DurationType	DurationType

### Synchronize UDF Fields From P6

This is an export master data field mapping template which synchronizes UDF fields from P6 to Prime.

<b>P6</b>	<b>Prime</b>
DataType	DataType
Title	Title
SubjectArea	SubjectArea

### Sync Relationship Data for Prime

This is an export project data field mapping template which synchronizes relationship data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Type	Type
Lag	Lag
PredecessorActivityId	PredecessorActivityId
PredecessorActivityType	PredecessorActivityType
PredecessorProjectID	PredecessorProjectID
SuccessorActivityId	SuccessorActivityId
SuccessorActivityType	SuccessorActivityType
SuccessorProjectID	SucccessorProjectID

### Sync Risk Threshold Level Data for Prime

This is an export project data field mapping template which synchronizes risk threshold level data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Name	Name
Code	Code
RiskThresholdName	RiskThresholdName
RiskThresholdObjectId	RiskThresholdCode
Color	Color
Level	Level
Range	Range
CostRange	CostRange
ScheduleRange	ScheduleRange
ToleranceRange	ToleranceRange
ProbabiliityRange	ProbabiliityRange
ThresholdType	ThresholdType

### Sync Risk Threshold Data for Prime

This is an export project data field mapping template which synchronizes risk threshold data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Name	Name
Code	Code
ThresholdType	ThresholdType

### Sync Risk Impact Data for Prime

This is an export project data field mapping template which synchronizes risk impact data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
ProjectId	ProjectId
RiskId	RiskId
RiskThresholdName	RiskThresholdName
RiskThresholdObjectId	RiskThresholdCode
RiskThresholdLevelCode	RiskThresholdLevelCode

### Sync Risk Matrix Data for Prime

This is an export project data field mapping template which synchronizes risk matrix data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Name	Name
Code	Code
Description	Description
RiskScoringMethod	ImpactThresholdLevel
ImpactThresholdLevel	ImpactThresholdLevel
ProbabilityThresholdLevel	ProbabilityThresholdLevel



### Sync Risk Matrix Threshold Data for Prime

This is an export project data field mapping template which synchronizes risk matrix threshold data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
RiskMatrixName	RiskMatrixName
RiskMatrixObjectId	RiskMatrixCode
RiskThresholdName	RiskThresholdName
RiskThresholdObjectId	RiskThresholdCode

### Sync Risk Response Plan Data for Prime

This is an export project data field mapping template which synchronizes risk response plan data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Id	Id
Name	Name
ProjectId	ProjectId
RiskId	RiskId
IsActive	IsActive
ResponseType	ResponseType

### Sync Risk Response Action Impact Data for Prime

This is an export project data field mapping template which synchronizes risk response action impact data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
RiskResponseActionId	RiskResponseActionId
RiskThresholdName	RiskThresholdName
RiskThresholdObjectId	RiskThresholdLevelCode
RiskThresholdLevelCode	RiskThresholdLevelCode
RiskId	RiskId
ProjectId	ProjectId

### Sync Risk Response Action Data for Prime

This is an export project data field mapping template which synchronizes risk response action data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
Id	Id
Name	Name
RiskResponsePlanId	RiskResponsePlanId
ActivityId	ActivityId
StartDate	StartDate
FinishDate	FinishDate
PlannedStartDate	PlannedStartDate
PlannedFinishDate	PlannedFinishDate
RemainingCost	RemainingCost
ActualCost	ActualCost
PlannedCost	PlannedCost
Status	Status
RiskId	RiskId
ProjectId	ProjectId

### Sync Activity Risk Assignment Data for Prime

This is an export project data field mapping template which synchronizes activity risk assignment data from P6 to Prime.

<b>P6</b>	<b>Prime</b>
RiskId	RiskId
ActivityId	ActivityId
ProjectId	ProjectId

### Sync Workspaces to Prime Workspace Code

This is an import master data field mapping template which synchronizes workspace location codes from Prime in P6.

<b>P6</b>	<b>Prime</b>
CodeTypeName	CodeTypeName
CodeValue	CodeValue
Description	Description
SequenceNumber	SequenceNumber

### Create ProjectCode Type Fields in P6

This is an import master data field mapping template which synchronizes project code types from Prime in P6.

<b>Prime</b>	<b>P6</b>
Name	Name
Length	Length

### Sync WBS Structure For P6

This is an import project data field mapping template which synchronizes the WBS structure from Prime in P6.

<b>P6</b>	<b>Prime</b>
Code	Code
Name	Name
ProjectId	ProjectId
IsWorkPackage	IsWorkPackage
SequenceNumber	SequenceNumber

## Business Objects

The *Gateway Provider Reference Guide* provides a comprehensive listing of all business objects and all associated fields available with each Primavera provider delivered with Primavera Gateway. Review the list of supported business objects in each application to determine the data that needs to be supported for integration in Primavera Gateway.

To view these business objects in the Primavera Gateway user interface, log in to Gateway and select the **Data Dictionary** menu. To view these business objects on Oracle Technical Network, navigate to the Primavera Gateway Product Library on Oracle Technical Network and expand *User Content*.

## BI Publisher Setup Tasks

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Oracle BI Publisher is a reporting solution to efficiently author, manage, and deliver reports and documents.

Use the *General Reporting Tasks* section of this chapter to learn about the general setup tasks that you should perform in order to setup and maintain BI Publisher in your cloud environment. For specific information about the tasks that are required to use BI Publisher in terms of a product, such as Oracle Primavera Prime, Primavera Unifier, and P6 EPPM, refer to one of the following sections:

- ▶ *Reporting in Oracle Primavera Prime*
- ▶ *Reporting in P6 EPPM*
- ▶ *Reporting in Primavera Unifier*

## BI Publisher Setup Tasks

Before getting started, familiarize yourself with the way BI Publisher handles reports. The application populates its list of reports from the Report Definitions that load from BI Publisher's web services. When you need to create or modify a report, you will use BI Publisher. The BI Publisher documentation will help you understand how it works. Before continuing with the following sections, you need to learn about the following Report Definitions from the BI Publisher documentation:

- ▶ Data Model
  - ▶ Writing SQL queries and data templates
- ▶ Parameters
  - ▶ Include these types: Text, Menu, Date, Boolean
  - ▶ Work with the List of Values
  - ▶ Include different settings that you can set
- ▶ Templates

This chapter will tell you:

- ▶ How to configure BI Publisher for Oracle Primavera Prime
- ▶ About Parameters

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## Understanding BI Publisher Security Models

BI Publisher is configured to use the Oracle Fusion Middleware Security Model for maintaining users and security.

In this model, BI Publisher resides in an Oracle WebLogic Server domain, where all resources are managed as a unit. BI Publisher security is managed in the active security realm configured for the domain in which it resides. Each security realm consists of a set of configured security providers, users, groups, security roles, and security policies that are used to protect WebLogic resources. When a user attempts to access a particular WebLogic resource, WebLogic Server tries to authenticate and authorize the user by checking the security role assigned to the user in the relevant security realm and the security policy of the particular WebLogic resource.

## Reports in BI Publisher

BI Publisher integrates with Oracle Primavera Prime, Primavera Unifier, and the P6 EPPM Extended Schema to deliver on-demand web-based reporting.

### Associating Reports in the Catalog with their Data Model

To add reports when using the catalog:

- 1) Log in to BI Publisher as a user with administrator privileges.
- 2) Navigate to the catalog folder that has the sample reports.
- 3) Select a report.
- 4) Click **Edit**.
- 5) In the top left hand corner, click the magnifying glass icon next to **Data Model**.
- 6) Select the corresponding data model with the same name as the report, and click **Open**.
- 7) Save the report.
- 8) Repeat for each report in the folder.

### Why Do I Need Parameters?

Oracle Primavera Prime supports parameter keys in BI Publisher. Users will populate these parameters when running and scheduling custom reports. For most of the parameters you add, lists will be available for users when they are entering the value. The default behavior for an unrecognized parameter will be to provide a plain text box. The user will then need to type in the correct value. If the value is not in the format the report expected, the report will fail to run.

Adding parameters to your reports allows users to run or schedule a report. They can select or filter what data to include without having to first create additional reports or data templates for reports. For example, consider this scenario:

- ▶ You have a report on projects and each project has a code value assigned to it to determine the department of the team working on it.
- ▶ You want each team to be able to run the report, but they want to see only the capital plans for their location.

Without parameters, you would need to create a different report and data template for each team. All of these reports would be almost the same, except each statement pulling the report data would have a different connection to the project code table to match the correct location. With parameters, you can do this with one report and data template.

### Defining Parameters in BI Publisher

When adding a new parameter in BI Publisher you will see the following fields:

- ▶ **Identifier** – The key for the parameter. Determines whether a list supports the parameter.
- ▶ **Data Type** – String should be the default type. When using a supported parameter, select String for the type.
- ▶ **Default Value** – The value entered in this field will be the default for the parameter whenever the report runs. Users will be able to see this value in P6.
- ▶ **Parameter Type** – Text, Menu, and Date are the common types. Unless otherwise specified, you should use Text as the default for the supported parameters. If you need to select multiple values, use Menu.
- ▶ **Display Label** – The text that displays in P6 for the parameter. If you do not set a display label, the identifier displays instead.

---

### Allowing for Multiple Values Returned Through a List

If you need a supported parameter to return a comma separated list of values for an IN clause in the data template, do the following:

- 1) In BI Publisher, set the parameter type to **Menu**. This will allow you to link it to a list.
- 2) Create a hard coded list or a query to get the possible values for the parameter.  
See examples of this in BI Publisher's pre-packaged reports.
- 3) Select the list of values you just created for the parameter.
- 4) Check the **Multiple Selection** option for the parameter.

If a parameter allows for multiple selections, the application will allow selecting multiple values from the list or allow users to continue to assign values without closing the list. Values will have commas to separate parameters when the return value appears.



## Reporting in Oracle Primavera Prime

### Running Reports

To test Oracle Primavera Prime reports, you must have a BI Publisher user who matches your Oracle Primavera Prime username and has the Reports role.

To test the sample reports:

- 1) Log in to Oracle Primavera Prime.
- 2) Select **Home**.
- 3) On the **Home** menu, select **Browse**.
- 4) In the **Browse** dialog box, in the **Filter** list, select **Workspace**.
- 5) Choose a workspace and select **Select**.
- 6) On the **Workspace** menu, select **Reports**.
- 7) On the **Reports** page, select the **Advanced Reports** tab.
- 8) Expand the list, select a report, and select **Run**.
- 9) In the **Run Report** dialog box:
  - a. Verify the correct report is listed in the **Report Name** field.
  - b. Select a template from the **Template** list.
  - c. Select how you would like the report to be delivered from the **Delivery Type** list.

#### Notes:

- **Note:** If you select **Email** from the **Delivery Type** list, you must select **Email Options** and supply an email address in the **To** field. You can also specify **CC** and **BCC** addresses, the **Subject** line for the email, and enter text for the body of the email.
  - If you selected to have the report delivered by email, select whether you want to receive notification by email when the report is run or if it fails in the **Select Notifications** section.
- d. Select a type of output for the report from the **Format** list.
  - e. Verify that the report provides the information you expect in the **Report Parameters** section.
  - f. Select **Run**.

## Supported Parameters

You can use any parameter for BI Publisher, but users will have to ensure they enter the value correctly, or the SQL statements in the data template will fail. Using supported parameters will allow you to provide a user interface to enter the values for parameters.

### Parameter: **WORKSPACE ID**

**Identifier:** p\_workspace\_id

**Details:** Allows users to select workspace nodes

**Values:** Workspace names separated by comma

**Maps to field:**

- ▶ Table: CO\_PROJECT and WS\_WORKSPACE
- ▶ Field: PROJECT\_CODE and PROJECT\_NAME

**Use case:** Display all projects within a workspace node.

### Parameter: **PORTFOLIO ID**

**Identifier:** p\_portfolio\_id

**Details:** Allows users to select portfolio names

**Values:** Portfolio names separated by comma

**Maps to field:**

- ▶ Table: CP\_PORTFOLIO\_ID
- ▶ Field: CP\_PORTFOLIO\_ID and PORTFOLIO\_NAME

**Use case:** Display details about selected portfolios.

### Parameter: **PROJECT STATUS**

**Identifier:** p\_project\_status

**Details:** Allows users to select project status

**Values:** Project status separated by comma

**Maps to field:**

- ▶ Table: FD\_LIST\_VALUE
- ▶ Field: LIST\_KEY  
where LIST\_NAME=ProjectStatus

**Use case:** Display projects with only the selected project status.

### Parameter: **PROJECT ID**

**Identifier:** p\_project\_id

**Details:** Allows users to select project ID

**Values:** Project names separated by a comma

**Maps to field:**

- ▶ Table: CO\_PROJECT and WS\_WORKSPACE
- ▶ Field: PROJECT\_CODE and PROJECT\_NAME  
where NODE\_TYPE=Project

**Use case:** Display details about selected projects.

**Parameter: PROJECT CODE ID****Identifier:** p\_projectcode\_id**Details:** Allows users to select project code ID**Values:** Project codes separated by a comma**Maps to field:**

- ▶ Table: CO\_CODE\_TYPE holds the code name and the CO\_CODE\_VALUE holds the codes values. CO\_CODE\_VAL\_PROJECT holds an association between a project and the code values.
- ▶ Field: CO\_CODE\_VALUE.NAME

**Use case:** Display all projects with the selected project code assignments.**Parameter: CAPITAL PLAN ID****Identifier:** p\_cpplan\_id**Details:** Allows users to select capital plans**Values:** Capital plan names separated by a comma**Maps to field:**

- ▶ Table: CP\_CAPITAL\_PLAN
- ▶ Field: CAPITAL\_PLAN\_NAME

**Use case:** Display details for selected capital plans.**Parameter: CAPITAL PLAN TYPE****Identifier:** p\_cpportfolio\_id**Details:** Allows users to select capital plan types**Values:** Capital plan type names separated by a comma**Maps to field:**

- ▶ Table: CP\_PORTFOLIO
- ▶ Field: PORTFOLIO\_NAME

**Use case:** Display details for selected capital plan types.**Parameter: MANAGER****Identifier:** p\_owner\_id**Details:** Allows users to select project owner**Values:** Project owners separated by a comma**Maps to field:**

- ▶ Table: USERS
- ▶ Field: USER\_NAME

**Use case:** Display a list of projects with the selected project owner assigned.**Parameter: PROJECT LOCATION****Identifier:** p\_location\_id**Details:** Allows users to select project locations**Values:** Project locations separated by a comma

**Maps to field:**

- ▶ Table: CO\_LOCATION
- ▶ Field: LOCATION\_NAME

**Use case:** Display a list of projects with the selected project location assigned.

**Parameter: START YEAR**

**Identifier:** p\_startyear\_id

**Details:** Allows users to specify start year

**Values:** Year in YYYY format

**Maps to field:** Does not map to any DB field

**Use case:** Display a list of projects that start in the specified start year.

**Parameter: END YEAR**

**Identifier:** p\_end\_id

**Details:** Allows users to specify end year

**Values:** Year in YYYY format

**Maps to field:** Does not map to any DB field

**Use case:** Display a list of projects that end in the specified end year.

**Parameter: START MONTH**

**Identifier:** p\_startmonth\_id

**Details:** Allows users to specify start month

**Values:** Date in Mon-YY format

**Maps to field:** Does not map to any DB field

**Use case:** Display a list of capital plans that start in the specified start month.

**Parameter: END MONTH**

**Identifier:** p\_end\_id

**Details:** Allows users to specify end month

**Values:** Date in Mon-YY format

**Maps to field:** Does not map to any DB field

**Use case:** Display a list of capital plans that end in the specified end month.

**Parameter: PLANNED BUDGET (operand)**

**Identifier:** p\_budgetoperand\_id

**Details:** Allows users to select an operand

**Values:** Is Greater Than, Is Less Than, Is Equal To, Is Between

**Maps to field:** Does not map to any DB field

**Use case:** Select the operand to use with the additional budget parameters.

**Parameter: BUDGET AMOUNT**

**Identifier:** p\_budgetamount\_id

**Details:** Allows users to enter a budget amount

**Values:** Enter numeric value

**Maps to field:** Does not map to any DB field

**Use case:** When the Planned Budget (operand) parameter is “Is Equal To”, show all projects with a Planned Budget equal to the specified Budget Amount.

**Parameter: AND**

**Identifier:** p\_budgetand\_id

**Details:** Allows users to enter a second Budget Amount

**Values:** Enter numeric value

**Maps to field:** Does not map to any DB field

**Use case:** When the Planned Budget (operand) parameter is “Is Between”, show all projects with a planned budget between the specified Budget Amount (previous parameter) and Budget And.

### Assigning Permissions to the PrimeReports Folder

If you are using the BI Publisher security model, you must add permissions to the PrimeReports folder.

To assign permissions to the PrimeReports folder:

- 1) Log in to BI Publisher as an Administrator.
- 2) Click on **Catalog Folders**.
- 3) Under **Shared Folders**, highlight the **PrimeReports** folder.
- 4) In the **Tasks** pane, click **Permissions**.
- 5) Click **+** to add a role.
- 6) Click **Search** to list all available roles.
- 7) Highlight the **PrimeReports** role and click **Move**.
- 8) Click **OK** to close the **Add Roles** window.
- 9) In the **Permissions** window, select all permissions for the **PrimeReports** role.
- 10) Click **OK** to save.

## Reporting in P6 EPPM

P6 relies on BI Publisher and the P6 EPPM Extended Schema to produce reports. To run reports in P6, you must complete these tasks:

- 1) For Publication Services, you will need to configure publication settings for General Data, Time Distributed Data, Blob Data, and Log retention. You can also configure publication services settings for Project Arbiter, Projects, Enterprise Data, Enterprise Summaries, Resource Management, and Security.
- 2) Configure and deploy the Publication Services required to populate the reporting views in the P6 EPPM Extended Schema. See **Working with Publication Services for Reporting** (on page 170) and **Publishing P6 Data for Reports** (on page 174).
- 3) Configure BI Publisher to allow P6 to use parameter keys so users do not have to enter field values for reports.
- 4) When you begin working in P6, you can configure your application settings and global scheduled services.
- 5) Provide users with the 'Edit EPS Costs/Financials' project privilege if they need to view project costs in a report generated from the P6 EPPM Extended Schema.

## Publication Services

Data in the P6 Extended Schema is calculated and stored by Publication Services, which give administrators control over when data is calculated and stored in the P6 Extended Schema. Publication Services exist for project and global data. Global data includes enterprise data, as well as resource and role, portfolio, and security data. Project data includes all information about projects, including summaries and calculations.

The Publish Project service is dedicated to publishing project data to the P6 Extended Schema.

---

**Note:** The Publish Project service recalculates and publishes all project business objects containing calculated or denormalized data including, but not limited to: the WBS, activities, resource/role assignments, high-level planning assignments, relationships, risks, documents, expenses, steps, milestones, UDF values, notes, issues, budget change logs, timesheets, code assignments, funding source assignments.

---

Four additional Publication Services publish global data to the P6 Extended Schema:

- ▶ Publish Enterprise Data
- ▶ Publish Enterprise Summaries
- ▶ Publish Resource Management
- ▶ Publish Security

The first time a data type is published to the P6 Extended Schema all data is recalculated and published to the extended schema tables. After a data type has been published for the first time, future publication services recalculate and publish only data that has changed since the last time that data was published.

When any of the publication services runs, each business object type processed by the service is individually timestamped, and the timestamp stored in the database. The services can accurately determine exactly which data has changed since the last time it was published using these timestamps because they exist at the individual business object type level.

Configure Publication Services in P6 as follows:

- ▶ Set up automatic publication and enable P6 to publish project and global data on the Services page in Application settings.
- ▶ Enable the types of global data to be scheduled in Global Scheduled Services.
- ▶ Disable or enable publication for a selected project on the Services page in Project Preferences.
- ▶ Add, verify the status of, modify, or delete project management services on the Project Scheduled Services page.

### Tip

Run the global data services before turning on the Project Arbiter service.

To learn more about the Arbiter service see this article:

[https://blogs.oracle.com/priminout/entry/px\\_services\\_project\\_publication\\_arbiter](https://blogs.oracle.com/priminout/entry/px_services_project_publication_arbiter)

## Assigning Permissions to the P6Reports Catalog Folder

To read, run, schedule, and view reports, you must assign the BIConsumer role access to the objects in the P6Reports catalog.

To assign permissions to the P6Reports catalog:




- 1) Log into BI Publisher as an administrator.
- 2) Select **Catalog Folders**.
- 3) Under **Shared Folders**, highlight the **P6Reports** folder.
- 4) In the **Tasks** pane, click **Permissions**.
- 5) Select **+** to add a role.
- 6) Select **Search** to list all available roles.
- 7) Highlight the **BIConsumer** role and click **Move**.
- 8) Click **OK** to close the **Add Roles** window.
- 9) In the **Permissions** window, select **Read**, **Run Report Online**, **Schedule Report**, and **View Report Output**.
- 10) Click **OK** to save.

## Running P6 Reports

To run P6 reports, you must:

- ▶ Assign Enterprise Reports module access to the P6 user.
- ▶ Have a BI Publisher user who matches your P6 user name and has the P6 Reports role.
- ▶ Run publication services first to ensure the report executes successfully.

To run reports:

- 1) Log into P6.
- 2) Click **Reports**.
- 3) On the **Report** page:
  - a. Click **View** and select **Reports**.
  - b. Select a report.
  - c. Click  **Run Report**.
- 4) In the **Report Settings** dialog box:
  - a. In the **File Name** field, enter a file name for the report.
  - b. In the **Template** list, choose a template to apply to the report.
  - c. In the **Format** list, choose a file format for the delivery of the report.
  - d. In the **Delivery Type** list, choose to have the report sent through e-mail or display the file immediately.
    - If you chose **E-mail**, click  and enter or select e-mail addresses for the intended report recipients.
    - If you chose **File**, the report will display after you click **Run**.
  - e. If you chose **E-mail**, in the **Notification** section, choose to send yourself a status notification of the report run.
  - f. In the **Report Parameters** section, specify values for the parameters in the **Field Name** column. You can enter values directly in the field or double-click in the field and click  to open a selection dialog box.

---

**Note:** When selecting Project parameters, if you choose to add an EPS to the Selected Projects list, only the projects directly under the EPS are added. If additional EPSs are under the parent EPS, these projects will not automatically be included in the report; however, you can select additional EPSs and add them to the Selected Projects list.

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**Caution:** To avoid system performance issues, be as specific as possible when entering values for reports. Narrow down your choices to include only what is absolutely necessary.

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- g. Click **Run**.



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## About Publication Services and Reporting

Before you can generate reports, data must be refreshed and calculations must be made in precisely arranged tables and fields. *Publication Services* address these reporting needs gathering and calculating data as close as possible to real-time. To make this happen, you can configure P6 to automatically publish data to reporting tables. Depending on the type of data published, P6 tables may still generate reports, or a combination of P6 and reporting tables may generate them. An administrator must configure settings for Publication Services before publishing reporting data.

Your organization's P6 EPPM data has two categories: *project* data and *global* data. Published project data includes all information about your projects, including summaries and calculations. Published global data includes enterprise data, resource and role data, portfolio data, and security data.

To summarize the reporting process:

- 1) Users create new data or make changes to existing data in P6.
- 2) P6 global and project data publishes, automatically or manually, to tables for reporting.
- 3) Reports generate directly from the collective P6 EPPM database with the P6 Extended Schema reporting tables.

---

### Note:

The BI Publisher sample reports were designed to be run against the small data set included in the sample database. These reports are provided as an example of the product's capability only. Oracle provides no guarantee, implied or explicit, that the BI Publisher sample reports will run against your database or will produce meaningful data when they are run against your database. You may modify the BI Publisher sample reports to suit your own data set, including adding filter criteria to limit data output or changing filter criteria to suit your data. You need a full BI license to modify sample reports.

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## Working with Publication Services for Reporting

To achieve near real-time reporting, you can configure P6 to automatically publish to tables that store updated data, including calculations and summary data. These tables also create views for generating reports. The P6 data is split into two general categories: *project* data and *global* data. Project data includes all information about your projects, including summaries and calculations. Global data includes enterprise data, as well as resource and role, portfolio, and security data. The image below summarizes the key concepts in the publication and reporting process.

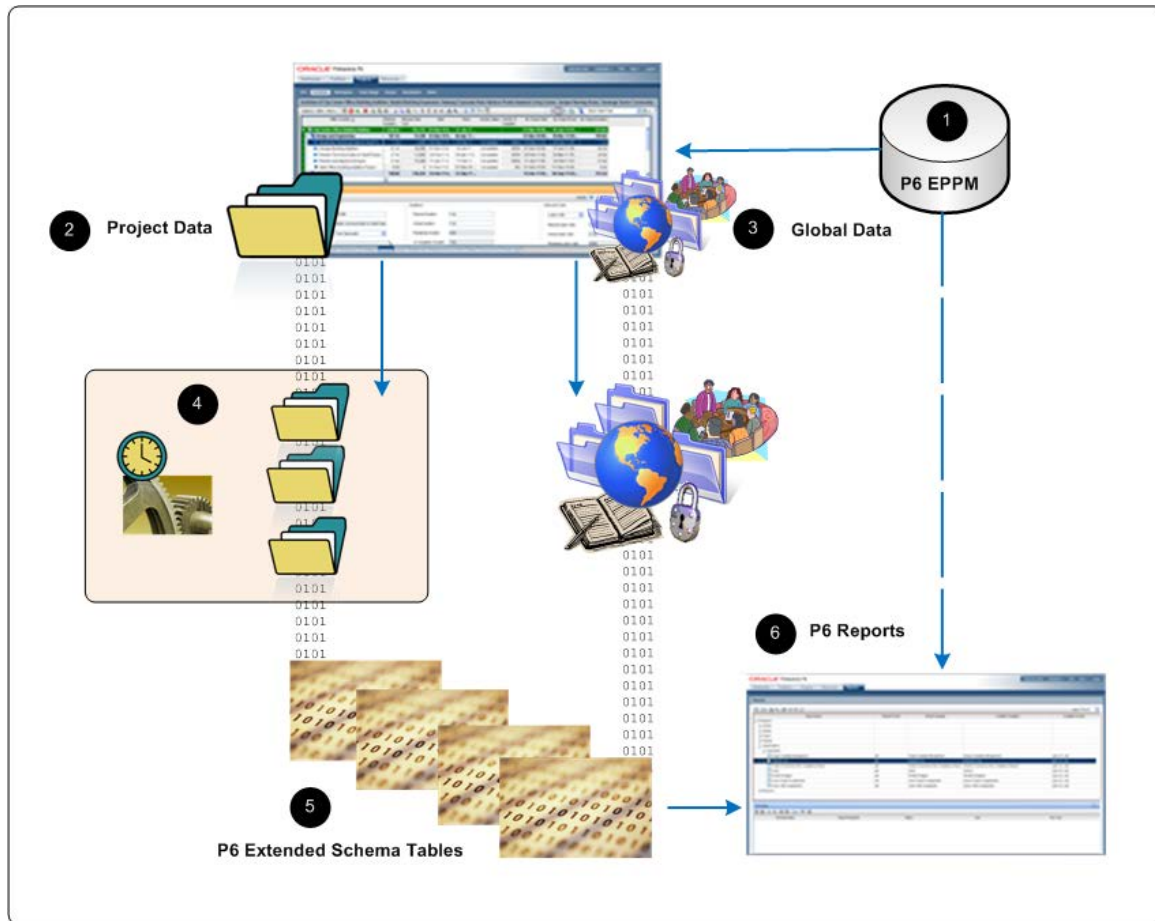


Table of Key Publication Services Concepts

Item	Description
1	<b>EPPM Database:</b> The EPPM database captures all the data your organization generates every second of every day. However, the raw data in the EPPM database is not structured for immediate reporting.
2	<b>Project Data:</b> You can configure P6 to automatically publish a project based on publication thresholds. Based on the options you select, you can prioritize projects for publication in a queue. If necessary, you can manually add a project to the queue.
3	<b>Global Data:</b> You can configure services in P6 to schedule the publication of global data based on recurring intervals that you specify. If necessary, you can also immediately publish this data manually.
4	<b>Project Queue:</b> Projects publish in sequential order based on priority. Your administrator can control which projects are added to the publishing queue, when, and in what order. These options ensure the project data you need most is available for P6 reporting in near real-time.
5	<p><b>P6 Extended Schema Tables:</b> The project and global services recalculate certain logical fields in the P6 EPPM database and store them as physical fields in the P6 Extended Schema tables so they are available for reporting and other purposes. Some fields in P6, such as durations, are calculated in real time as related field data is changed and are not stored in the database. Publication services recalculate these fields and store their values in the extended schema tables. Other fields, such as note fields, are not stored in the database in a format suitable for reporting. For these fields, publication services will convert them to a format more suitable for reporting.</p> <p><b>Note:</b> For information about which tables are updated by the Publication Services for Reporting, see the following knowledge management document: What PX tables are updated when running Global Scheduled Services or Publish Project [ID 1491245.1]  <a href="https://support.oracle.com/epmos/faces/ui/km/DocumentDisplay.jspx?id=1491245.1">https://support.oracle.com/epmos/faces/ui/km/DocumentDisplay.jspx?id=1491245.1</a></p>
6	<b>P6 Reports:</b> You can run reports directly against P6 Extended Schema table views.

P6 administrators control project and global publication processes, which are summarized below.

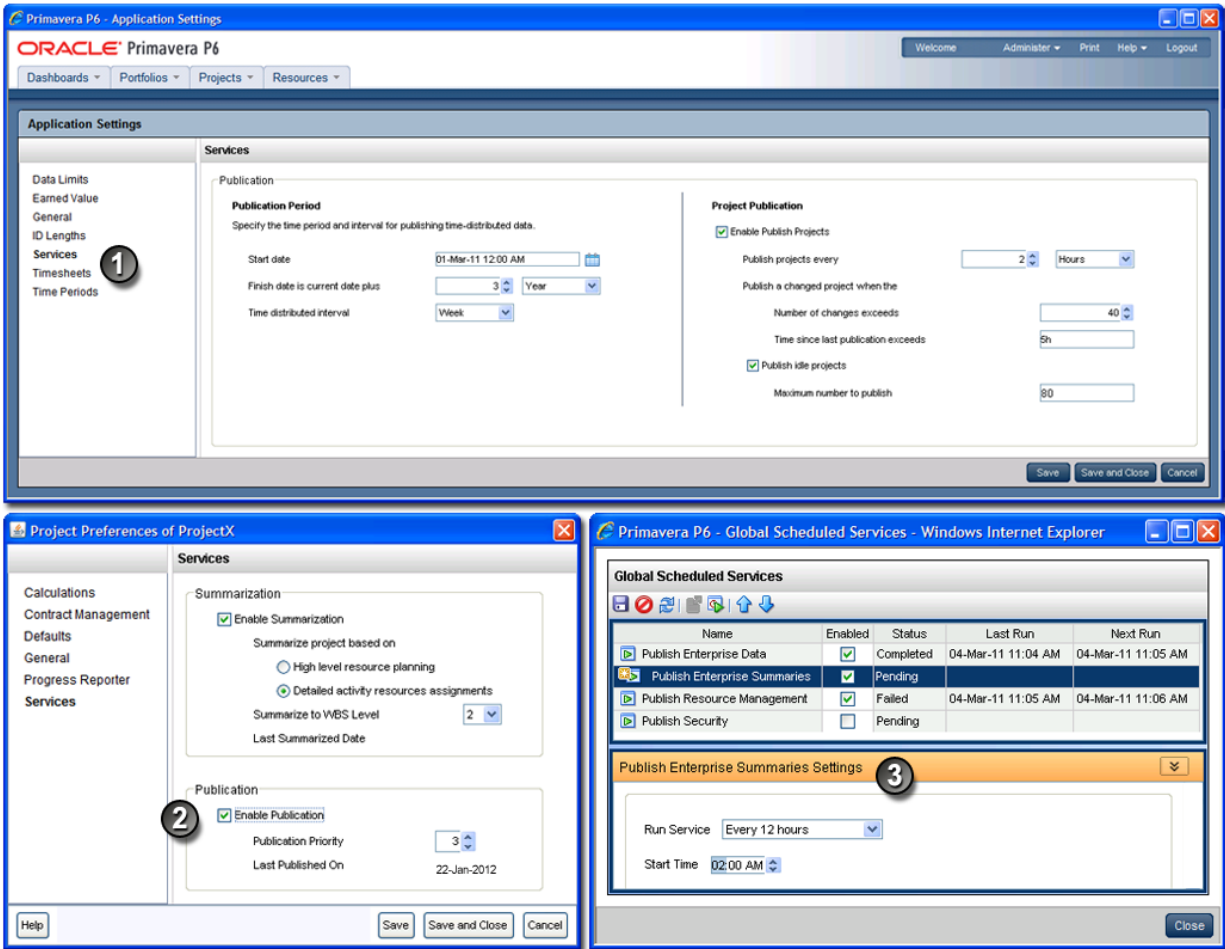


Table of Key Publication Services Elements

Item	Description
1	<p><b>Application Settings for Publication Services:</b> Located under the <b>Administer</b> menu, begin by clicking <b>Application Settings</b>, and then choose <b>Services</b>. On the <b>Services</b> page, specify the start date, period of time to add to the current publication date to determine a finish date, and time-distributed interval for publication. In the <b>Project Publication</b> section, you can enable the <i>Publish Projects</i> services to refresh project data according to a time interval you set. You can further determine a change threshold, time threshold, and even decide if idle projects should be added to the queue, and if so, set a maximum limit to the concurrent number of idle projects being published.</p>
2	<p><b>Project Preferences for Publication Services:</b> Then, navigate to the <b>EPS</b> page in the Projects section. Click a project and select <b>Set Project Preferences</b> from the <b>Actions</b> menu. On the <b>Services</b> page, select the <b>Enable Publication</b> option to indicate you want to include this project in the <i>Publish Projects</i> services. All new projects are enabled for publication by default. Clear the option if you do not want to publish the project's data. On this page, you can also set the project's priority relative to other projects entering the publication queue.</p>
3	<p><b>Global Scheduled Publication Services:</b> Return to the <b>Administer</b> menu and navigate to the <b>Global Scheduled Services</b> dialog box to enable the types of global data services you want to schedule. Below each service you enable, specify the recurring interval and start time in the detail window.</p>

## Defining Publication Periods


Before publishing global or project data for reporting, define the publication period. The publication period you define should be large enough to capture all the project data you need to include in reports.

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**Caution:** You can perform these steps again at any time to modify your settings. However, if an *Admin Superuser* modifies the **Start date**, **Time distributed interval**, or **Finish date is current date plus** fields, all data will be fully recalculated. Oracle recommends that you only reconfigure publication options on weekends or during off-peak hours to prevent the disruption of other P6 features.

---

To define the publication period:

- 1) Click the **Administer** ▼ menu and select **Application Settings**.
- 2) On the **Application Settings** pane, click **Services**.
- 3) On the **Services** page, in the **Publication Periods** section:
  - a. In the **Start date** field, click  to select the exact month, day, year, and time to mark the initial start of the data publication period. Select any date in the past that represents a reasonable amount of historical spread data for your organization. For example, in order for users to be able to produce time-distributed reports for any date range, enter the earliest project start date at your organization.
  - b. In the **Finish date is current date plus** field, select a numeric quantity and unit of time to construct a dynamic period of time. Whenever a publication service runs, this period of time is added to the current date to determine the finish date for the publication of data. For example, if the value is 5 years, time-distributed data will always be published covering the period of time that begins with the value in the **Start Date** field and extends five years into the future each time a service runs.
  - c. In the **Time distributed interval** field, select the unit of time in which time distributed data will be recalculated and published. Set this to **Week** if performance is of primary importance and you do not need to see daily data.
  - d. Click **Save**.

## Publishing P6 Data for Reports

Reports based on P6 data require timely access to the most current data in order to be accurate. For example, report recipients expect to see updated enterprise data and project data including any calculations. In order to provide this data, P6 generates and stores data in reporting tables (the *P6 Extended Schema*). You can configure P6 to automatically publish essential data to the tables or manually generate it so that the most current data is available for reporting.

The data is split into two general categories: *project* data and *global* data. Project data includes all information about your projects, including baselines, summaries and calculations, and global data includes enterprise data, resource and role data, and security data.

## Enabling Automatic Publishing of P6 Project Data for Reports

Perform the following procedure to enable projects for publication, and to set options for automatic project publication. Then, as you work, P6 automatically detects the changes to your projects that trigger the publication of their data.

To enable Publication Services for project data:

- 1) Click the **Administer** ▼ menu and select **Application Settings**.
- 2) On the **Application Settings** pane, select **Services**.
- 3) On the **Services** page, in the **Project Publication** section:
  - a. Select **Enable Publish Projects** to enable automatic project publication based on defined thresholds. Selecting this option also allows users to manually publish projects.
  - b. In the **Publish projects every** field, select an interval by which projects are polled to be published.
  - c. Enter a number in the **Number of changes exceeds** field. This threshold setting determines the number of edits users can make to the project data before P6 publishes its data. Assuming a constant rate of change among projects, a lower value will result in more frequent publication of project data. If you enter a value of 0, projects with tracked changes will be automatically published.
  - d. Enter a time period for the **Time since last publication exceeds** field. This threshold setting determines how often the publication of project data should occur. For example, if you enter 12 hours, the project data will be published every 12 hours unless the threshold for the number of changes has already been reached.
  - e. Select **Publish idle projects** to add projects to the service queue that are enabled for publication but have not been changed during the time threshold. This setting is only valid for the initial run of the service.
  - f. In the **Maximum number to publish** field, enter the maximum number of pending idle *Publish Project* services that can be present at once in the service queue. This prevents performance problems during peak demand when enabling the publication of a large number of projects. For example, if the service runs and queues 40 projects that have exceeded specified thresholds and must be published, or that have been manually published, and you have set the maximum to 100, P6 will schedule up to 60 idle projects for publication.
  - g. Select **Enable Baseline Publication** if you want to be able to publish baseline data.
  - h. Click **Save**.


## Tips

- ▶ If your organization is upgrading to P6, select **Publish idle projects** to add your migrated projects to the service queue after your database is upgraded. This will publish all your projects in the queue and refresh the available data for reporting. After an upgrade, this setting is no longer applicable, and projects will be submitted to the service queue based on threshold values specified on the **Application Settings** page.
- ▶ Clear the **Publish idle projects** option if your organization does not report against completed projects.
- ▶ The **Maximum number to publish** field is only applicable immediately following an upgrade, when all projects are considered idle. When all projects have been published, the service queue will no longer be constrained based on this setting.
- ▶ A project will be automatically submitted to the service queue if you change the project baseline, calendar, or data date. Projects are also automatically submitted to the queue if you select or clear **Calculate Activity % Complete from activity steps** option, or modify the default price/unit value for assignments without activities, from the **Set Project Preferences** dialog box available from the **Actions** menu on the **EPS** page.
- ▶ For threshold settings, projects are added to the service queue based on tracked changes to data. Only changes to activities, resource/role assignments, relationships, and the WBS are tracked.

## Configuring Publication Service Settings for Projects

After enabling automatic publishing, perform the following procedure to configure settings for each individual project in *Publication Services*. Then, as you work, P6 automatically detects the changes to your project that trigger the publication of its data in the service queue.

To configure Publication Service settings for a project:

- 1) Click **Projects**.
- 2) On the **Projects** navigation bar, click **EPS**.
- 3) On the **EPS** page:
  - a. Select a project.
  - b. Click the **Actions** ▼ menu and select  **Set Project Preferences....**
- 4) On the **Project Preferences** pane, select **Services**.
- 5) On the **Services** page, in the **Publication** section:
  - a. Select the **Enable Publication** option.

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**Note:** By default, all projects are enabled for publication. The **Enable Publication** setting only needs to be modified if you wish to disable publication for a project or re-enable publication of a previously disabled project.

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- b. Adjust the relative **Publication Priority** up or down between 1 and 100 with 50 being the default priority value, 1 being the highest priority, and 100 being the lowest.
- c. Click **Save and Close**.



**Tips**

- ▶ If you wish to modify publication settings for many projects at one time, you can display the **Enable Publication**, **Last Published On**, and **Publication Priority** fields as columns in your EPS view.
- ▶ If you want to publish Baseline data, the project must be published.

**Enabling Automatic Publishing of P6 Global Data for Reports**

Perform the steps below to configure P6 to automatically publish any of the following types of global data to reporting tables.

- ▶ Enterprise Data
- ▶ Enterprise Summary Data including portfolio data
- ▶ Resource Management Data
- ▶ Security Data




To automatically publish P6 global data:

- 1) Click the **Administer** ▼ menu and select **Global Scheduled Services**.
- 2) In the **Global Scheduled Services** dialog box:
  - a. Select a service, then configure its settings in the **Service Settings** detail window. For example, you might specify that the service runs daily on Wednesdays with a start time of 10:15 PM.

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**Note:** Oracle recommends running the **Publish Security** service first if the **Run After Previous** option is selected in the **Run Service** list for other publication services. Running the **Publish Security** service first will ensure that security data updates in the extended schema as soon as possible and ensures that the security restrictions are in place before you run the report.


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- b. Select the **Enabled** option for any of the four global services listed.
- c. If you choose to run one or more services with the relative frequency value of *After previous service*, click  **Move Up** (Ctrl+Alt+Up) or  **Move Down** (Ctrl+Alt+Down) to arrange the services in your preferred sequence.
- d. Click  **Save**.
- e. Click **Close**.



## Manually Publishing P6 Project Data for Reports

Perform the steps below to publish the data from one or more projects to the reporting tables so it is ready for reporting. Any of the projects' baselines which is enabled for publishing will also be published when you perform these steps. P6 will automatically publish project data; however, you may want to publish the data manually in special cases such as when generating an important report at a specific time.

To manually publish P6 project data:

- 1) Click **Projects**.
- 2) On the **Projects** navigation bar, click **EPS**.
- 3) On the **EPS** page, select one or more projects, or select an EPS node to publish all of its subordinate projects.
- 4) On the **Actions** menu, click  **Publish Projects**.

### Tips

- ▶ In order to manually publish project data from the EPS page, *Publication Services* must be enabled and configured.
- ▶ You can publish all open projects by clicking  **Publish Projects** on the **Run** submenu on the **Actions** menu of the **Activities** page. You can also publish projects by selecting one or more projects on the **EPS** page, and then using the right-click menu.
- ▶ Projects are not immediately published. Instead, they will be added to the queue of projects being processed for publication the next time the Publish Projects service runs. View settings for the Publish Projects service, including how often the service runs, on the **Services** page, which is located on the **Application Settings** pane. Depending on your security privileges, the **Application Settings** pane may not be accessible. You can check the status of the Publish Projects service after it has been added to the service queue by selecting **View Service Status** from the **Actions** menu on the **Activities** page.
- ▶ If some of the selected projects are not enabled for publication, only those projects enabled for publication will be submitted to the service queue. If none of the selected projects are enabled for publication, you will not be able to click  **Publish Projects**.
- ▶ A project will be automatically submitted to the service queue if you change the project baseline, calendar, or data date. Projects are also automatically submitted to the queue if you select or clear the **Calculate Activity % Complete from activity steps** option, or modify the default price/unit value for assignments without activities from the **Set Project Preferences** dialog box available from the **Actions** menu the **EPS** page.



## Manually Publishing P6 Global Data for Reports

Perform the steps below to manually publish any of the following types of global data to the reporting tables.

- ▶ Enterprise Data
- ▶ Enterprise Summary Data including portfolio data
- ▶ Resource Management Data
- ▶ Security Data

P6 will automatically publish global data; however, you may want to publish the data manually in special cases such as when generating an important report at a specific time.

To manually publish P6 global data:

- 1) Click the **Administer** ▼ menu and select **Global Scheduled Services**.
- 2) In the **Global Scheduled Services** dialog box:
  - a. Select any of the four global services listed.
  - b. Click  **Run Service** on the **Global Scheduled Services** toolbar.
  - c. In the resulting message box, click **OK**.
  - d. Click  **Save**.
  - e. Click **Close**.

### Tips

- ▶ If the service listed under the manually selected service is configured to run **After previous service**, it will run automatically when the selected service finishes.
- ▶ You must have the global security privilege, 'Administer Global Scheduled Services,' to run a service from the **Global Scheduled Services** dialog box.

## Supported Parameters in P6

You can use any parameter for BI Publisher, but users will have to ensure they enter the value correctly, or the SQL statements in the data template will fail. Using supported parameters will allow you to provide a user interface to enter the values for parameters. Supported parameters for P6 fall into one of three categories:

- ▶ **Enumeration** parameters allow users to pick parameters from static lists.
- ▶ **Dynamic** parameters will generate the list at run time. For example, when focusing on Project ID, users will see a Project list that pulls the current projects from the P6 EPPM database.
- ▶ **Primitive** parameters support basic selections. For example, if a parameter is a boolean, an option will appear for users to select or clear a text box instead of typing true or false.

The following are the supported parameters for P6, grouped by category:

### Enumeration Parameters

- ▶ Activity Priority
- ▶ Assignment Proficiency
- ▶ Activity Status
- ▶ Activity Type
- ▶ Constraint Type
- ▶ Duration Type
- ▶ Percent Complete Type
- ▶ Project Status
- ▶ Rate Source
- ▶ Rate Type
- ▶ Resource Type
- ▶ Risk Status
- ▶ Risk Type

### Dynamic Parameters

- ▶ Activity Code Value
- ▶ User Defined Activity Code (type and value)
- ▶ Cost Account
- ▶ EPS
- ▶ Expense Category
- ▶ Funding Source
- ▶ Portfolio
- ▶ Project
- ▶ Project Code Value
- ▶ User Defined Project Code (type and value)
- ▶ User Defined Resource Code
- ▶ Resource Code Value
- ▶ Resource Team
- ▶ Resource ID

- ▶ Responsible Manager
- ▶ Risk Category
- ▶ Role
- ▶ Role Team
- ▶ Timesheet Period
- ▶ User

### Primitive Parameters

- ▶ Date
- ▶ Boolean
- ▶ Integer
- ▶ Float

### Custom Parameters

- ▶ List of Values

---

### Enumeration Parameters

Enumeration parameters map to fields that have a set list of possible values. When running a report with a enumeration parameter, P6 will offer a list to select one of the values. Users will see the localized text for the enumeration value's description; however, the return value will be the English description of the enumeration, which is the value the PX Views database stores.

Descriptions of enumeration parameters are in the following format:

**Parameter:** *Name of the parameter.*

- ▶ **Identifier:** *The value you must enter in the identifier field in BI Publisher when creating the parameter for the report.*
- ▶ **Details:** *A description and technical details of the parameter.*
- ▶ **Values:** *The values that will be available in P6.*
- ▶ **Maps to field:** *The database field the return value maps to in the PX Views database. It could match multiple fields in the database, so only the primary table is listed.*
- ▶ **Use case:** *An example of how you might use the parameter in a report.*

## Supported Enumeration Parameters

### Parameter: Activity Priority

- ▶ **Identifier:** p\_activity\_priority
- ▶ **Details:** Allows users to select the leveling priority of an activity.
- ▶ **Values:** Top, High, Normal, Low, Lowest
- ▶ **Maps to field:** ACTIVITY.LEVELINGPRIORITY
- ▶ **Use case:** Filter activity data by leveling priority.

### Parameter: Assignment Proficiency

- ▶ **Identifier:** p\_assignment\_proficiency
- ▶ **Details:** Allows users to select a value for assignment proficiency.
- ▶ **Values:** Master, Expert, Skilled, Proficient, Inexperienced
- ▶ **Maps to field:** RESOURCEASSIGNMENT.PROFICIENCY
- ▶ **Use case:** Filter resource assignment data by the proficiency of the assignment.

### Parameter: Activity Status

- ▶ **Identifier:** p\_activity\_status
- ▶ **Details:** Allows users to select activity status.
- ▶ **Values:** Not Started, In Progress, Completed
- ▶ **Maps to field:** ACTIVITY.STATUS
- ▶ **Use case:** Filter activity reports based on a certain status.

### Parameter: Activity Type

- ▶ **Identifier:** p\_activity\_type
- ▶ **Details:** Allows users to select the activity type.
- ▶ **Values:** Task Dependent, Resource Dependent, Level of Effort, Start Milestone, Finish Milestone, WBS Summary
- ▶ **Maps to field:** ACTIVITY.TYPE
- ▶ **Use case:** Filter activity reports based on the type of the activity.

### Parameter: Constraint Type

- ▶ **Identifier:** p\_constraint\_type
- ▶ **Details:** Allows users to select an activity constraint type.
- ▶ **Values:** Start On, Start On or Before, Start On or After, Finish On, Finish On or Before, Finish On or After, As Late As Possible, Mandatory Start, Mandatory Finish
- ▶ **Maps to field:** ACTIVITY.PRIMARYCONSTRAINTTYPE and ACTIVITY.SECONDARYCONSTRAINTTYPE
- ▶ **Use case:** Filter activities in a report by the activity primary or secondary constraint type.

### Parameter: Duration Type

- ▶ **Identifier:** p\_duration\_type
- ▶ **Details:** Allows users to select the duration types of an activity.

- ▶ **Values:** Fixed Units/Time, Fixed Duration & Units/Time, Fixed Units, Fixed Duration & Units
- ▶ **Maps to field:** ACTIVITY.DURATIONTYPE
- ▶ **Use case:** Filter activities in a report based on their duration type.

**Parameter: Percent Complete Type**

- ▶ **Identifier:** p\_percent\_complete\_type
- ▶ **Details:** Allows users to select the percent complete type of an activity.
- ▶ **Values:** Physical, Duration, Units
- ▶ **Maps to field:** ACTIVITY.PERCENTCOMPLETETYPE
- ▶ **Use case:** Filter activities in a report based on the percent complete type of the activity.

**Parameter: Project Status**

- ▶ **Identifier:** p\_project\_status
- ▶ **Details:** Allows users to select the status of a project.
- ▶ **Values:** Planned, Active, Inactive, What If, Requested, Template
- ▶ **Maps to field:** PROJECT.STATUS
- ▶ **Use case:** Filter the projects in a report based on the desired type. For example, you might want to use this for a report that needs to display information only on planned projects.

**Parameter: Rate Source**

- ▶ **Identifier:** p\_rate\_source
- ▶ **Details:** Allows users to select the rate source of an assignment.
- ▶ **Values:** Resource, Role, Override
- ▶ **Maps to field:** RESOURCEASSIGNMENT.RATESOURCE
- ▶ **Use case:** Filter resource assignments included in a report based on the rate source of the assignment.

**Parameter: Rate Type**

- ▶ **Identifier:** p\_rate\_type
- ▶ **Details:** Allows users to select the rate type of an assignment.
- ▶ **Values:** Price/Unit, Price/Unit 2, Price/Unit 3, Price/Unit 4, Price/Unit 5
- ▶ **Maps to field:** RESOURCEASSIGNMENT.RATETYPE
- ▶ **Use case:** Filter resource assignments included in a report based on the rate type of the assignment.

**Parameter: Resource Type**

- ▶ **Identifier:** p\_resource\_type
- ▶ **Details:** Allows users to select the resource type of an assignment.
- ▶ **Values:** Labor, Nonlabor, Material
- ▶ **Maps to field:** RESOURCEASSIGNMENT.RESOURCE TYPE
- ▶ **Use case:** Filter resource assignments included in a report based on the resource type of the assignment.

### Parameter: Risk Status

- ▶ **Identifier:** p\_risk\_status
- ▶ **Details:** Allows users to select the status of a risk.
- ▶ **Values:** Proposed, Open, Active, Rejected (Closed), Managed (Closed), Impacted (Closed)
- ▶ **Maps to field:** RISK.RISKSTATUS
- ▶ **Use case:** Filter risks in a report based on the status of the risk.

### Parameter: Risk Type

- ▶ **Identifier:** p\_risk\_type
- ▶ **Details:** Allows users to select the type of a risk.
- ▶ **Values:** Threat, Opportunity
- ▶ **Maps to field:** RISK.RISKTYPE
- ▶ **Use case:** Filter risks in a report based on the type of risk.

---

## Dynamic Parameters

Dynamic parameters map to fields that have a varying list of possible values. When running a report with a dynamic parameter, P6 will offer a list to select one of the available values.

Descriptions of dynamic parameters are in the following format:

### **Parameter:** *Name of the parameter.*

- ▶ **Identifier:** *The value you must enter in the identifier field in BI Publisher when creating the parameter for the report. In some cases, identifiers can pass in context by appending short names to the end of the identifier. The character in quotations is the separator that the code splits and <name> represents the context you are trying to pass in.*
- ▶ **Details:** *A description and technical details of the parameter.*
- ▶ **P6:** *What the editor for the parameter will be in the Reports section of P6.*
- ▶ **Return Value:** *The values that will be available in P6.*
- ▶ **Maps to field:** *The database field the return value maps to in the PX Views database. It could match multiple fields in the database, so only the primary table is listed.*
- ▶ **Use case:** *An example of how you might use the parameter in a report.*



## Supported Dynamic Parameters

### Parameter: Activity Code Value

- ▶ **Identifier:** p\_a\_code\_val\_\_<short name>
- ▶ **Details:** Enables users to select an activity code value via a list. Context passes into the parameter by appending a colon":" followed by the short name of the activity code type you want to set.
- ▶ **P6:** Provides a list that displays the Activity Code Values for the Activity Code type passed in the context.
- ▶ **Return value:** Short name of the Activity Code (unique per code type).
- ▶ **Maps to field:** ACTIVITYCODE.CODEVALUE
- ▶ **Use case:** Create a report that displays some basic information about activities. Users at five locations need to run the report, but they only want to see the data for activities with codes matching their location. Instead of creating five reports hard coding the location (for example, location=L1) on each report, you can create one report and add this parameter to it (for example, p\_a\_code\_val\_\_Location).

In the data template for the report, filter the activities based on this parameter. Hard code the left side of the activity filter to match the activity code you selected, which in this case is location.

**Example query:** CODETYPENAME='Location' &  
CODEVALUE=:p\_a\_code\_val\_\_Location

If you did not have a parameter for this, you would need different templates for each location.

### Parameter: User Defined Activity Code

- ▶ **Identifier:** p\_activity\_code\_value "." <number> p\_activity\_code\_type "." <number>
- ▶ **Details:** Enables users to select a user defined Activity Code. The user defined Activity Code is two parameters on the report in BI Publisher, but will display only as one row in the report settings parameter table.
- ▶ **P6:** Provides a list that displays all global Activity Code types. When users expand a type, the list shows the values for that type. By selecting a value, both the type and value will return to the report.
- ▶ **Return value:** Short name for the Activity Code Value, primary key for the Activity Code type.
- ▶ **Maps to field:**
  - p\_activity\_code\_value maps to ACTIVITYCODE.CODEVALUE
  - p\_activity\_code\_type maps to ACTIVITYCODE.CODETYPEOBJECTID

- ▶ **Use case:** Create a report that can have a variable Activity Code. The report pulls activities and displays some basic statistics of the activities. The data template for the report must accommodate setting both sides of the query. While a typical parameter just sets the IN clause for a user defined field, this parameter must set both sides. The "Activity Code Value" parameter **Use case** example shows where it hard codes the CODETYPENAME to be **Location**. This parameter enables multiple user defined activity codes to be used on the same report. For each parameter you use, you must add p\_activity\_code\_value.1 and p\_activity\_code\_type.1. There must be a pair of numbers to ensure that the editor works properly.

#### Parameter: Cost Account

- ▶ **Identifier:** p\_cost\_account
- ▶ **Details:** Enables users to select Cost Accounts. The P6 user must have access to view Cost Accounts for the list to populate.
- ▶ **P6:** Provides a list that displays all Cost Accounts in a hierarchical tree.
- ▶ **Return value:** Short name of the cost account (unique).
- ▶ **Maps to field:** COSTACCOUNT\_FULL.NAME
- ▶ **Use case:** Filter items using certain Cost Accounts or generate information on the Cost Accounts.

#### Parameter: EPS

- ▶ **Identifier:** p\_eps\_id
- ▶ **Details:** Enables a user to select an EPS.
- ▶ **P6:** Provides a list that displays all of the EPS nodes where the user has access.
- ▶ **Return value:** The short name of the EPS.
- ▶ **Maps to field:**
  - EPS\_FULL.NAME
  - EPS\_U.NAME
- ▶ **Use case:** Use a parameter for EPS to filter a query to load all projects under an EPS for a report.

#### Parameter: Expense Category

- ▶ **Identifier:** p\_expense\_category
- ▶ **Details:** Enables a user to select Expense Category where the user has access.
- ▶ **P6:** Will provide a list that displays all of the Expense Categories.
- ▶ **Return value:** The short name of the Expense Category (unique).
- ▶ **Maps to field:**
  - EXPENSECATEGORY\_FULL.NAME
  - EXPENSECATEGORY\_U.NAME
- ▶ **Use case:** Run a report filtered by assignments that use a certain Expense Category associated with them.

**Parameter: Funding Source**

- ▶ **Identifier:** p\_funding\_source
- ▶ **Details:** Enables a user to select a Funding Source.
- ▶ **P6:** Provides a hierarchical list filled with Funding Sources where a user has access.
- ▶ **Return value:** The short name of the Funding Source (unique).
- ▶ **Maps to field:**
  - FUNDINGSOURCE\_FULL.NAME
  - FUNDINGSOURCE\_U.NAME
- ▶ **Use case:** Filter the report data to include only projects that have the selected Funding Source assigned.

**Parameter: Portfolio ID**

- ▶ **Identifier:** p\_portfolio\_id
- ▶ **Details:** Enables a user to select a Portfolio where the user has access.
- ▶ **P6:** Provides a list of Portfolios where the user has access.
- ▶ **Return value:** The portfolio short name (unique).
- ▶ **Maps to field:** PROJECTPORTFOLIO\_FULL.NAME
- ▶ **Use case:** Filter the report data to include only the projects in a Portfolio.

---

**Note:** If there is a user portfolio that shares the same name as one of the global portfolios, then the report will return data for both when you run it. You'll need to use the Portfolio Name and User ID to make a unique constraint.

---

**Parameter: Project ID**

- ▶ **Identifier:** p\_project\_id
- ▶ **Details:** Enables a user to select one or more projects where the user has access.
- ▶ **P6:** Click the **Projects** ▼ menu, and select **Open Project** to display the Project list. Enables switching between Template and Regular projects.
- ▶ **Return value:** The project short name (unique).
- ▶ **Maps to field:** PROJECT\_FULL.ID
- ▶ **Use case:** Run a report where the data comes from selected projects.

**Parameter: Project Code Value**

- ▶ **Identifier:** p\_p\_code\_val\_\_<short name>
- ▶ **Details:** Select a Project Code value. Note that underscores ( ) are the only special character allowed. Do not use other special characters.
- ▶ **P6:** Provides a list containing the project code values for the Project Code whose short name matches the second part of the parameter. For example: If the short name was Scope, and there were four values – Local, Regional, Country, and Global – the list would display Local, Regional, Country, and Global in the list.
- ▶ **Return value:** Activity code value short name (unique per code type).
- ▶ **Maps to field:** PROJECTCODE\_FULL.CODEVALUE

- ▶ **Use case:** Filter the set of projects loaded to those projects that have the user-selected Project Code Value assigned to them.

#### Parameter: User Defined Project Code

- ▶ **Identifier:** p\_project\_code\_value."<number> p\_project\_code\_type."<number>
- ▶ **Details:** Similar to the User Defined Activity Code, this parameter consists of two parameters in BI Publisher: One parameter returns the selected Project Code Value, and the other parameter returns the Project Code type ID. For each parameter you use, you must add both **p\_project\_code\_value.#** and **p\_project\_code\_type.#**. There must be a pair of numbers for the editor to work properly. You can have multiple sets to allow for more than one User Defined Code Value.
- ▶ **P6:** Provides a list populated with all the global Project Codes as the first level. Expanding a Project Code type will list all the values for the type. In the parameter table, only one row will represent both parameters. After you select a Project Code Value, both parameters will be set.
- ▶ **Return value:** The short name for p\_project\_code\_value and the object id for p\_project\_code\_type.
- ▶ **Maps to field:**
  - p\_project\_code\_value maps to PROJECTCODE\_FULL.CODEVALUE
  - p\_project\_code\_type maps to PROJECTCODE\_FULL.CODETYPEOBJECTID
- ▶ **Use case:** Create a report that enables the projects to filter based on a Project Code that the user defines. Unlike the Project Code Value parameter, the report creator should not hard code the Project Code type. Instead, they should write the query to enable the p\_project\_code\_type.1 parameter to determine the Project Code type. This lets a report be more flexible in the filter criteria.

#### Parameter: User Defined Resource Code

- ▶ **Identifier:** p\_resource\_code\_value "<number> p\_resource\_code\_type "<number>
- ▶ **Details:** Similar to the other user-defined codes this parameter consists of two parameters on the report in BI Publisher: One parameter returns the selected Resource Code Value, and the other parameter returns the Resource Code type ID. For each parameter you use, you must add both **p\_resource\_code\_value.#** and **p\_resource\_code\_type.#** There must be a pair of numbers in order for the editor to work properly. You can have multiple sets to allow for more than one user-defined code value.
- ▶ **P6:** Provides a list populated with the Resource Codes as the first level. Expanding a Resource Code type will list all the values for the type. In the parameter table, only one row will represent both parameters. After you select a Resource Code Value, both parameters will be set.
- ▶ **Return value:**
  - p\_resource\_code\_value: short name for the code value
  - p\_resource\_code\_type: object id for the code type
- ▶ **Maps to field:**
  - p\_resource\_code\_value maps to RESOURCECODE\_FULL.CODEVALUE
  - p\_resource\_code\_type maps to RESOURCE\_CODE\_FULL.CODETYPEOBJECTID

- ▶ **Use case:** Create a report that allows for the resources to be filtered based on a Resource Code Value and type that the user defines. Unlike the Resource Code Value parameter, the report creator should not hard code the resource code type. Instead, they should write the query to enable the p\_resource\_code\_type.1 parameter to determine the resource code type. This allows a report to be more flexible in the filter criteria.

#### Parameter: Resource Code Value

- ▶ **Identifier:** p\_r\_code\_val\_\_<short name>
- ▶ **Details:** Select a Resource Code value to use for filtering loaded resources for a report.
- ▶ **P6:** Provides a list populated with the resource code values for the resource code type indicated by the <short name> at the end of the parameter. For example: If the short name was Department, the list would display Engineering, Marketing, Research, and Development as the values in the list.
- ▶ **Return value:** The short name of the Resource Code Value (unique per code type).
- ▶ **Maps to field:** RESOURCECODE\_FULL.CODEVALUE
- ▶ **Use case:** Create a report where the resources filter based on the resources that match the user-selected Resource Code Value for a particular Resource Code type. The report data query must hard code the Resource Code type for matching resources to the returned code value.

#### Parameter: Resource Team

- ▶ **Identifier:** p\_resource\_team
- ▶ **Details:** Enables resource team selection.
- ▶ **P6:** Provides a list populated with resource teams that the user has access to view.
- ▶ **Return value:** The short name of the resource team (unique).
- ▶ **Maps to field:** RESOURCETEAM\_FULL.NAME
- ▶ **Use case:** Filter a report to load resources that are on the selected resource team.

#### Parameter: Resource ID

- ▶ **Identifier:** p\_resource\_id
- ▶ **Details:** Select a resource to filter a report.
- ▶ **P6:** Provides a list populated with resources that the user has access to view.
- ▶ **Return value:** The short name of the resource (unique).
- ▶ **Maps to field:** RESOURCES\_FULL.NAME
- ▶ **Use case:** Filter the activities in a report based on the user-selected resource assigned to the activity.

#### Parameter: Responsible Manager

- ▶ **Identifier:** p\_responsible\_manager
- ▶ **Details:** Select a responsible manager (OBS).
- ▶ **P6 GUI:** Provides a list populated with the OBS structure that the user has access to view.
- ▶ **Return value:** The short name of the OBS (unique).
- ▶ **Maps to field:** PROJECT\_FULL.OBSNAME and OBS\_FULL.NAME

- ▶ **Use case:** Filter a report to load only the projects that have the user-selected responsible manager.

#### Parameter: Risk Category

- ▶ **Identifier:** p\_risk\_category
- ▶ **Details:** Select a Risk Category.
- ▶ **P6:** Provides a list populated with all the Risk Categories that the user has access to view.
- ▶ **Return value:** The name of the Risk Category (unique).
- ▶ **Maps to field:** RISK\_FULL.RISKTYPE
- ▶ **Use case:** Filter a report to load only the Risks of the user-selected category.

#### Parameter: Role Team

- ▶ **Identifier:** p\_role\_team
- ▶ **Details:** Select a Role Team.
- ▶ **P6:** Provides a list populated with all the Role Teams the user has access to view.
- ▶ **Return value:** The name of the Role Team (unique).
- ▶ **Maps to field:** ROLLTEAM\_FULL.NAME
- ▶ **Use case:** Filter a report of Resources to include only the Resources that are assigned to the user-selected Role Team.

#### Parameter: Role

- ▶ **Identifier:** p\_p6\_role\_id
- ▶ **Details:** Select a Role.
- ▶ **P6:** Provides a list populated with all the Roles the user has access to view.
- ▶ **Return value:** The short name of the Role (unique).
- ▶ **Maps to field:** ROLL\_FULL.ID
- ▶ **Use case:** Filter a report of Resources to include only the Resources that have the user-selected Role.

#### Parameter: Timesheet Period

- ▶ **Identifier:** p\_timesheet\_period\_start and p\_timesheet\_period\_end
- ▶ **Details:** This parameter consists of two parameters on the report in BI Publisher, but is represented by a single row in parameter list for P6. The user will select a timesheet period, and it will set the Start Date to p\_timesheet\_period\_start and the End Date to p\_timesheet\_period\_end.
- ▶ **P6:** Drop down menu of the Timesheet Periods in the database. Selecting a Timesheet Period will return the Start Date and End Date in the parameters.
- ▶ **Return value:** The Start Date and End Date of the Timesheet Period selected by the user.
- ▶ **Maps to field:** N/A
- ▶ **Use case:** Filter a report to look for a date between two dates of a Timesheet Period. Instead of adding two date parameters and making the user manually enter the Start and End of the period, the user can use a drop down with the Timesheet Periods in the database.

**Parameter: User**

- ▶ **Identifier:** p\_p6\_user\_id
- ▶ **Details:** Select a P6 EPPM user name.
- ▶ **P6:** Provides a list populated with the P6 users that the logged-in user has access to view.
- ▶ **Return value:** The user name (unique).
- ▶ **Maps to field:** USERS\_FULL.NAME

---

**Primitive Parameters**

In BI Publisher, when you create a parameter, a field Data Type allows the following options: String, Integer, Boolean, Float. The default type is String, and you should use it for all the supported enumeration and dynamic parameters. For primitive parameters, select the appropriate option for the parameter that you are configuring.

**Type: Date**

- ▶ **Editor:** P6 will use the date picker to select the date.
- ▶ **Return:** The date string in the format entered in BI Publisher.

**Type: Boolean**

- ▶ **Editor:** Will use a check box editor.
- ▶ **Return:** Either true (selected) or false (cleared).

**Type: Integer**

- ▶ **Editor:** Will use a default text box without validation.
- ▶ **Return:** The text entered in the box.

**Type: Float**

- ▶ **Editor:** Will use a default text box without validation.
- ▶ **Return:** The text entered in the box.

---

**Allowing for Multiple Values Returned via a List**

If you need a supported parameter to return a comma separated list of values for an IN clause in the data template, do the following:

- 1) In BI Publisher, set the parameter type to **Menu**. This will allow you to link it to a list.
- 2) Create a hard coded list or a query to get the possible values for the parameter.  
See examples of this in BI Publisher's pre-packaged reports.
- 3) Select the list of values you just created for the parameter.
- 4) Check the **Multiple Selection** option for the parameter.

If a parameter allows for multiple selection, P6 will allow selecting multiple values from the list or allow users to continue to assign values without closing the list. Values will have commas to separate parameters when the return value appears.

## Reporting in Primavera Unifier

The Oracle Business Intelligence Publisher (BI Publisher) integrates with Unifier Cloud Service to deliver on-demand web-based reporting.

The following sections describe how to configure Oracle Business Intelligence Publisher (BI Publisher) for Primavera Unifier Cloud Service.

### Creating a BI Publisher Report in Unifier

To create a new BI Publisher report:

- 1) Sign in to your Unifier environment.
- 2) Click the **Company Workspace** tab.
- 3) In the left pane:
  - a. Switch to **Administration Mode**.
  - b. Expand **Configuration**.
  - c. Select **Custom Prints and Reports**.
- 4) In the right pane:
  - a. Select the **New** (drop-down arrow).
  - b. Choose **Report with Internal Data Model** or **Report with External Data Model**.  
If you choose Report with External Data Model, you will continue using the steps in the section.

---

#### Notes:

- **Internal data model:** Unifier maintains the data model file internally. Any changes in the data views, data links, query parameters, and additional parameters are being applied and saved in the data model when the BIP report is saved.
  - **External data model:** Users need to upload the data model (.xdm) file and maintain it externally. This means that the user may modify the .XDM file manually or by using the BIP data model editor.
- 

- 5) In the **General** tab of the **Custom Report** dialog box:
  - a. In the **Name** field, enter a name for the report.
  - b. In the **Description** field, enter a brief description about the report (maximum 250 characters and non-ASCII characters are permitted).
  - c. The **Data Model Type** field is a pre-populated and read-only field with values that can be internal or external based on the option selected at the time of creating the custom print.
  - d. In the **Report Level** field, select a type for the report.
  - e. In the **Main View** field, select a type of view for the report.

---

**Note:** The administrator can create these user-defined views. Refer to the *Unifier Administrator's Guide* for more information on creating data views.

---



- 6) In the **Views** tab, click **Add** or **Remove** to edit the views for the report.
- 7) Click **Apply**.
- 8) When the **Sample Data** tab opens, you can download the sample XML data for creating or modifying report layouts:
  - ▶ If you are using the Internal Data Model:
    - a. Select a project/shell.
    - b. Select a number of rows to return.
    - c. Click **Generate**.
    - d. Click **Download**.
    - e. Save the XML file.
  - ▶ If you are using the External Data Model:

---

**Note:** You cannot download sample data until after you define and publish the report.

---

- a. Select a project/shell.
- b. Click **Generate**.
- c. Click **Download**.
- d. Save the XML file.

If you haven't already installed the BI Publisher plug-in for Microsoft Word, install it now. You can find it here: <http://www.oracle.com/technetwork/middleware/bi-publisher/downloads/index.html>. Use one of the following:

---

**Note:** Refer to the Tested Configurations document for the list of applications and supported version levels.

---

- ▶ Oracle BI Publisher Desktop for 32 bit Office on Windows (245 MB)
- ▶ Oracle BI Publisher Desktop for 64 bit Office on Windows (245 MB)

Refer to the documentation included with BI Publisher for more information on using this plug-in.

- 1) Create a report layout in Microsoft Word to have templates available in Microsoft Word when you publish reports:
  - a. Open **Microsoft Word**.
  - b. Create an **RTF** file.
  - c. In the **BI Publisher** tab:
    1. Select **Sample XML** in the **Load Data** section.
    2. Upload the XML file you created above.
    3. Create a table for the layout using the Table Wizard included with the BI Publisher plug-in.
    4. Save and close the RTF file.
- 2) Return to the **Custom Report** dialog box.
- 3) In the **Template File** tab (consisting of Add, Modify, Remove, and Download options)
  - a. Click **Add** to open the template window.

- b. Enter information in the following fields: Template Name, Template Type, and Report Layout File.
  - To localize the Custom Report output for different languages, you can provide XLIFF files for RTF-type templates here.
  - The Template Name field accepts spaces and other characters.
- c. Click **Browse** to select the template file for uploading.
- d. Click **OK** to confirm the upload.
- 4) Return to the **Company Workspace** tab.
- 5) In the left pane:
  - a. Expand **Configuration**.
  - b. Select **Custom Reports**.
- 6) In the right pane, select the report you want to publish.
- 7) Click the **Status** dropdown on the toolbar and select **Published**.

### Making New Reports Appear in Unifier

To make newly defined reports appear:

- 1) Go to the **Company Workspace** tab and switch to the Administrator mode.
- 2) Navigate to **Configuration** (User Mode Navigator).

---

**Note:** If the company does not use User Mode Navigator, you will be able to the report name under Access Control of Project or Program.

---

- 3) Open the **project/shell User Mode Navigator**.
- 4) In the dialog box, find the newly created BIP reports on the right side and move them to the left side under **Reports->Custom**.
- 5) Save the changes and close the popup window.
- 6) Select the **project/shell User Mode Navigator** and click the **Deploy** button to ensure the changes take effect.

---

**Note:** BI Publisher User Group requirement: To be able to create reports, Users must be added to BI Publisher Author user group through OIM.

---

### Setting Permissions for Custom Reports

To set permissions for Custom Reports:

- 1) Go to the **Company Workspace** tab and switch to **Admin** mode.
- 2) Click **Access Control** in the left Navigator. In the Access Control log window, there are two modules: Administration Mode Access and User Mode Access.
  - ▶ If the reports are at the Program level, in the right pane, select **User Mode Access > Programs > Reports > Custom > <report name>**.
  - ▶ If the reports are at the Project level, in the right pane, select **User Mode Access > Shells/Projects (Standard) > Reports > Custom > <Report Name>**

- 3) Select the access for the appropriate user.
- 4) Click **OK**.

---

**Note:** A user with the "configure" permission to the Custom Report node, can configure custom print templates. There are no separate permissions for performing actions on the custom print templates.

---

## Creating Data Views

You will create data views to operate as data sources for custom reports.

To create a data view:

---

**Note:** Refer to the *Primavera Unifier Administrator's Guide* for more information.

---

- 1) Sign in to your Unifier environment.
- 2) Click the **Company Workspace** tab.
- 3) In the left pane:
  - a. Switch to **Administration Mode**.
  - b. Select **Data Structure Setup > Data Views**.
- 4) In the **User-Defined Data Views** window, click **New**.
- 5) Enter the information needed for your data view. See **Tips** for more information.
- 6) Click **Apply** and **OK**.
- 7) Highlight the new view and select **Status, Published**.

### Tips

The SQL definition will consist of the SQL query used to populate the report with specific data based on the desired output.

---

**Note:** If using the data view as a Main view in a Project level report, you must have a column named **project\_id**. If using the data view in a Program level report, you must have a column named **program\_id**.

---

For example, a Project level data view for a company registry "companyReg" can be like this below:

```
SELECT  pu.PID as PROJECT_ID,
        p.PROJECTNUMBER as PROJECTNUMBER,
        c.COMPANYNAME as COMPANY_NAME,
        c.SHORTNAME as COMPANY_SHORT_NAME,
        c.DESCRPTION as COMPANY_DESCRIPTION,
        c.CONTACTNAME as COMPANY_CONTACT_NAME,
        u.FULLNAME as USER_FULL_NAME,
```

```
        u.USERID as USER_ID,
        u.USERNAME as USER_NAME,
        u.EMAIL as USER_EMAIL
FROM    companyReg_SYS_USER_INFO_VIEW u,
        companyReg_SYS_COMPANY_INFO c,
        companyReg_SYS_PROJECT_INFO p,
        companyReg_SYS_PROJECTUSER pu
WHERE   c.COMPANYID = p.COMPANYID
        AND p.PID = pu.PID
        AND u.userid = pu.userid
```

## Creating Custom Reports in Unifier

Unifier integrates with BI Publisher to deliver on-demand web-based reporting through Unifier.

Custom Reports, built in BI Publisher, enable the Company Administrator (or power user) to build visually stunning, detailed reports.

### Examples

A report that combines information from multiple (and possibly non-linked) Business Processes (BPs)

A report that needs professional looking graphics, charts, images, or clip arts

The following sections explain the steps you need to take for creating Custom Reports in Unifier with BI Publisher.

---

## Download and Install BI Publisher Desktop for Microsoft Office

**Note:** For the full list of system requirements, supported software, and versions, refer to the *Tested Configurations* document under “Installation and Configuration Documentation” in the Primavera Unifier Online Documentation Library.

### 1) Download **Oracle BI Publisher Desktop for Microsoft Office**

from: <http://www.oracle.com/technetwork/middleware/bi-publisher/downloads/index.html>

Ensure that you choose the BI Publisher Desktop version (32bit vs. 64bit) based on your version of Microsoft Office 32 bit or 64 bit.

**Tip:** If your Microsoft Word executable is found at C:\Program Files (x86)\Microsoft Office\Office12\WINWORD.EXE, then you have the 32 bit version).

### 2) Run the installer.

No additional setup is required after running the installer. To ensure that the installation was successful, check to see that the plug-in has been added to your Microsoft Word user interface. The BI Publisher ribbon appears after launching Microsoft Word.

### (Optional) SQL Text Editor

Once you start to write more complex reports, having a text editor that highlights SQL keywords can make a big difference. For your needs, a simple editor such as Notepad++ would suffice. Ensure that you set the Language to SQL. You can copy the queries developed through the text editor and paste them into the Data View window.

### (Optional) SQL Developer

You can download Oracle SQL Developer

from: <http://www.oracle.com/technetwork/developer-tools/sql-developer/downloads/index.html> <http://www.oracle.com/technetwork/developer-tools/sql-developer/downloads/index.html>

- 1) Download the first option in the list: Windows 64-bit - zip file includes the JDK 7
- 2) Extract the file onto your computer (for example, C:\Oracle\sqldeveloper\)
- 3) Run **sqldeveloper.exe**

---

### Review Unifier Database Table Structure

Before building your SQL statement, review the Unifier database table structure.

You can find the Unifier database table name in two ways:

#### 1) Using Entity Reference (ER) Views

1. Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Data Structure Setup** > **ER Views**.
2. Open **Business Processes View**.
3. Use your browser search function and search for a BP you want to report against (for example, Invoices).
4. The name of the table appears under the BP Name, in blue (for example, UNIFIER\_UI. The word "unifier" is the prefix and common to all BP tables. The UI is the ID of the Invoices BP).

#### 2) Using BP IDs

1. Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **uDesigner** > **Business Processes**.
2. Locate the BPs that you want to use in the report and find the IDs (first column).
3. Add your deployment prefix and add an underscore ( \_ ) to get the table name (for example, UNIFIER\_UI).

**Note:** To access the Line Items of a BP, add **\_LINEITEM** to the table name (for example, UNIFIER\_UI\_LINEITEM).

The following lists the column names:

- ▶ Field Name
- ▶ Definition
- ▶ SQL Type

- ▶ Label
- ▶ Description

---

### Connect to Unifier Database

A direct connection to the Unifier database using SQL Developer is not possible. The creation of SQL queries must be done in Unifier Data Views, or by pulling rows down from Unifier into a local database.

If you need to pull the data into a local database for the purpose of SQL development, Oracle offers Oracle Database 11g Express Edition (XE) free of charge. You can install this lightweight DB on your computer and use it for development purposes.

To download the Oracle Database 11g Express Edition (XE) free of charge, go to: <http://www.oracle.com/technetwork/database/database-technologies/express-edition/overview/index.html>

Refer to the XE documentation for instructions on how to install the software and create a local database.

### (Optional) Pulling Down the Data

In Unifier, once you know the table names, you can export 200 lines so it can be inserted into your local Database (DB). To pull down the data:

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Data Structure Setup** > **Data Views**.
- 2) Click **New** to create a new Data View.
- 3) Enter a name (for example, Export DV) and a Label (for example, Export Data View).
- 4) In the SQL Definition field, enter the following for a particular table: `SELECT * FROM <tablename>`
- 5) Click **OK**.
- 6) Click the **Status** drop-down list and set the newly created Data View to **Published**.
- 7) Highlight the Data View you just created and click **Data** on the toolbar.
- 8) In the window, click **Export as SQL** on the toolbar to save the **.sql** file locally. This SQL file includes the CREATE and INSERT commands required to get your data into your local XE database.

At this point, you can create the table and insert the exported rows into your local XE database using tools like SQL Developer.

Repeat the steps above for any tables that you like to access offline.

---

**Note:** You can reuse the same Data View multiple times; however, you need to do find and replace in the downloaded SQL to ensure that the table names match the names that are in Unifier.

---

Since you have a subset of the database locally, you can use SQL Developer to write complex queries, offline, before bringing them into Unifier.

## Writing Your First Statement

- 1) Create a new SQL file in your text editor of choice.
- 2) Write the following SQL statement: `SELECT * FROM unifier_ui`
- 3) To manage the amount of data generated, select only the columns you want to include in your report.
  - ▶ See **Review Unifier Database Table Structure** for a list of all column names.
  - ▶ Instead of using the asterisk, or star, ( \* ) operator, specify which fields you want to include in our query result.
- 4) Replace the asterisk, or star, ( \* ) operator in your statement with a few column names (for example, `SELECT project_id, ID, record_no, title, status, UVEVENDORNAMETB50, amount FROM unifier_ui`)
- 5) Assign an alias to your table to limit the typing that you need to do.

### Example

Name you Invoice table "inv" by adding "inv" after the table name. You can then refer to each column using the alias, instead of the full name. Your statement should look like the following:

**Note:** The Query Builder re-formats the layout of your SQL.

```
SELECT inv.PROJECT_ID,
       inv.ID,
       inv.RECORD_NO,
       inv.TITLE,
       inv.STATUS,
       inv.UVEVENDORNAMETB50,
       inv.AMOUNT
FROM unifier_ui inv
```

- 6) Add aliases to the column names to make the column names easier to understand when building the BI Publisher report

### Example

```
SELECT inv.PROJECT_ID,
       inv.ID AS inv_ID,
       inv.RECORD_NO AS inv_record_no,
       inv.TITLE AS inv_title,
       inv.STATUS AS inv_status,
       inv.UVEVENDORNAMETB50 AS vendor,
       inv.AMOUNT AS inv_amount
FROM unifier_ui inv
```

- 7) (Optional) Choose any other columns from the invoice table that you want to include in your report.

**Note:** Unifier requires a field called "PROJECT\_ID" since Unifier uses the field for data filtering (for example, Only the Invoices from the project that you are running the report from are shown). Always leave a field called PROJECT\_ID in your main Data View to prevent receiving an error message when creating the Custom Report.

## SQL JOIN

The following scenario describes how use JOIN to combine rows from two or more tables based on a common column between them.

### Scenario

Information is missing in your Invoice report and you cannot find the information in the Invoices table. Furthermore, you have a column called CREATOR\_ID, but the column contains a number pointing to an ID in another table where all the User information is stored. You also have a column called PROJECT\_ID which points to another table where all the Project Information is stored.

### Solution

To find the table, follow these steps:

**Note:** You can use other SQL Joins to conduct the following.

Use a LEFT JOIN since this option returns all the rows from the left table (for example, Invoices) even if there are no matches in the right table (for example, User info table, Project info table, etc.).

To add the Invoice creator's name, match your CREATOR\_ID column from the Invoices table to your Users table (unifier\_sys\_user\_info\_view). You can do so by using a LEFT JOIN on the USERID column of the User table. Assign an alias (sysuser) to add the information to the end of your statement:

Example

```
LEFT JOIN unifier_sys_user_info_view sysuser
ON (inv.CREATOR_ID = sysuser.USERID)
```

Look at the ER Views (System Models View) to see what options are available in your sysuser table.

Grab the following columns from the table: `sysuser.FULLNAME`, `sysuser.EMAIL`, and `sysuser.WORKPHONE`.

Add the columns to the end of the SELECT section of your query. Each column specified in the SELECT portion must have a comma after it, except for the last one.

Access the information about the Project or Shell (name, number, start/end dates, etc.). You can find this information in the table `unifier_us_p`, with the column `proj.PID` that is used to join the two tables.

Example

```
LEFT JOIN unifier_us_p proj
ON (inv.PROJECT_ID = proj.PID)
```

Grab the following columns from the table. and add the columns to the end of the SELECT section, before the FROM, of your query. Each column specified in the SELECT portion must have a comma after it, except for the last one.

Example



```

proj.UGENPROJECTNAME --> AS ProjectName,
proj.UGENPROJECTNUMBER --> AS ProjectNumber,
proj.UUU_PROJECT_START_DATE --> AS ProjectStartDate,
proj.UGENPROJENDDATEDO --> AS ProjectEndDate,
proj.UGENINITBUDGETCA --> AS InitialBudget,
proj.UGENREVBUDGETCA --> AS RevisedBudget

```

Ensure that you see the following codes:

Example

```

SELECT inv.PROJECT_ID,
       inv.ID AS inv_ID,
       inv.RECORD_NO AS inv_record_no,
       inv.TITLE AS inv_title,
       inv.STATUS AS inv_status,
       inv.UVEVENDORNAMETB50 AS vendor,
       inv.AMOUNT AS inv_amount,
       sysuser.FULLNAME,
       sysuser.EMAIL,
       sysuser.WORKPHONE,
       proj.UGENPROJECTNAME --> AS ProjectName,
       proj.UGENPROJECTNUMBER --> AS ProjectNumber,
       proj.UUU_PROJECT_START_DATE --> AS ProjectStartDate,
       proj.UGENPROJENDDATEDO --> AS ProjectEndDate,
       proj.UGENINITBUDGETCA --> AS InitialBudget,
       proj.UGENREVBUDGETCA --> AS RevisedBudget
FROM unifier_ui inv
LEFT JOIN unifier_sys_user_info_view sysuser
ON (inv.CREATOR_ID = sysuser.USERID)
LEFT JOIN unifier_us_p proj
ON (inv.PROJECT_ID = proj.PID)

```

## SQL WHERE

The SQL WHERE Clause is used to filter records. Once you attain the the columns that you want, you can filter the data on any column.

The following scenario describes how use WHERE to filter records.

### Scenario

You only want to report on Invoices in an Approved or Pending state.

### Solution

Use the following WHERE clause at the end of our statement: `WHERE inv.STATUS = 'Approved' OR inv.STATUS = 'Pending'`

---

**Note:** You can add multiple filters using the OR and AND operators.

---

## SQL ORDER BY Keyword

The ORDER BY keyword is used to sort the result-set by one or more columns.

You can sort the data in the SQL to save the time it takes for BI Publisher to generate the report.

---

**Note:** The BI Publisher can also sort the data.

---

You can use the ORDER BY operator.

### Scenario

You want to sort your data first by Project ID and then by Invoice Record Number since that is the order the data will be reported on.

### Solution

Add this to the end of our statement:

```
ORDER BY inv.PROJECT_ID,  
         inv.RECORD_NO
```

**SQL Final Statement**

When done with JOIN, WHERE, and ORDER BY, you can save your statement locally.

Example based on the scenarios presented in the previous topics:

Invoice Upper Form Data	SELECT inv.PROJECT_ID,		
	inv.ID AS inv_ID,		
	inv.RECORD_NO AS inv_record_no,		
	inv.TITLE AS inv_title,		
	inv.STATUS AS inv_status,		
	inv.UVEVENDORNAME B50 AS vendor,		
	inv.AMOUNT AS inv_amount,		
Invoice Creator Data	sysuser.FULLNAME,		
	sysuser.EMAIL,		
	sysuser.WORKPHONE,		
Project Data	proj.UGENPROJECTNA ME	AS ProjectN ame,	
	proj.UGENPROJECTNU MBER	AS ProjectN umber,	
	proj.UUU_PROJECT_S TART_DATE	AS ProjectS tartDate,	
	proj.UGENPROJENDDA TEDO	AS ProjectE ndDate,	

	proj.UGENINITBUDGETCA	AS InitialBudget,	
	proj.UGENREVBUDGETCA	AS Revised Budget	<b>Note:</b> No comma ( , ) on the last line of the SELECT section.
	FROM unifier_ui inv		List of tables we're getting data from, including the fields we're using to match up the tables.
	LEFT JOIN unifier_sys_user_info_view sysuser		
	ON (inv.CREATOR_ID = sysuser.USERID)		
	LEFT JOIN unifier_us_p proj		
	ON (inv.PROJECT_ID = proj.PID)		
	WHERE inv.STATUS = 'Approved' OR inv.STATUS = 'Pending'		Filtering of the data
	ORDER BY inv.PROJECT_ID,		Sorting of the data
	inv.RECORD_NO		

## Adding Line Items

When you gathered all the information that you need, from the Upper form and associated tables (see **Writing Your First Statement**), you need to add the Line Items to your query results (for example, Invoice Line Items). The Line Items are stored in the UNIFIER\_UI\_LINEITEM table.

### Example

There are two ways to match the Invoice to the Invoice Line Items:

#### 1) JOIN the Line Items DB Table

By using a LEFT JOIN since it returns all the rows from the left table (Invoices) even if there are no matches in the right table (Invoice Line Items).

#### 2) Add Line Items

Add the Line Items as a second (separate) SQL statement and have Unifier combine the two as two separate data views. Invoice Line Items will be a Sub Report View to the Invoices Main Report.

### JOIN the Line Items DB Table

This method of matching the Invoice to the Invoice Line Items generates duplicate data (by the number of Line Items in the Invoice) in BI Publisher. As a result, this method is not recommended.

### Add Line Items

This method creates a new SQL query for the Invoice Line Items. This will result in a nested XML file, where all the Invoices Line Items are nested within their respective Invoice.

To add Line Items as a second (separate) SQL statement follow these steps:

#### 1) Create a new SQL statement in your SQL Text Editor (you can save the new file as Invoice\_LI.sql) and add the following to begin your SQL query: `SELECT * FROM unifier_ui_lineitem inv_li`

That is to say, you are going to select all the columns from the unifier\_ui\_lineitem table and give the table an alias of inv\_li.

#### 2) Specify which columns you want to include in your results.

```
SELECT inv_li.RECORD_ID,
       inv_li.LI_NUM,
       inv_li.SHORT_DESC,
       inv_li.UUU_UNIT_PRICE,
       inv_li.UUU_QUANTITY,
       inv_li.AMOUNT
```

```
FROM unifier_ui_lineitem inv_li
```

This is a Sub Report View in Unifier; therefore, you do not need to include a PROJECT\_ID column. Since Unifier needs to match the Invoice Line Items to the Invoices, you need to include the field that Unifier can use for the JOIN. You must include the inv\_li.RECORD\_ID column. If you look at the two tables (and compare it to the data in Unifier), you notice that the RECORD\_ID column in the line item table matches up with the ID column of the Invoice table.

- 3) Add aliases to these column names so they are easier to understand when you are building your BI Publisher report.

```
SELECT inv_li.RECORD_ID AS inv_li_record_no,  
       inv_li.LI_NUM AS inv_li_no,  
       inv_li.SHORT_DESC AS inv_li_desc,  
       inv_li.UUU_UNIT_PRICE AS inv_li_unit_price,  
       inv_li.UUU_QUANTITY AS inv_li_quantity,  
       inv_li.AMOUNT AS inv_li_amount  
FROM unifier_ui_lineitem inv_li
```

## SQL JOIN

Use this method when some data is not stored in the Invoices Line Item table. The following scenario describes how use JOIN to combine rows from two or more tables based on a common column between them.

### Scenario

You need to find the "unit of measure" name for each line item.

### Solution

This appears to be in the table SYS\_DATA\_OPTION.

**Note:** Replace "unifier" with your table prefix. See *Review Unifier Database Table Structure* for information about finding a table name.

```
LEFT JOIN SYS_DATA_OPTION sdo  
ON inv_li.UGENUNITOFMEASUREPD = sdo.OPTION_VALUE  
AND (sdo.DATA_NAME = 'Unit of Measure'  
AND sdo.REGISTRY = 'unifier')
```

1. Grab the following column from the table: sdo.OPTION\_NAME AS inv\_li\_uom and add them to your SELECT. The goal is to be able to access the cost code number and description for each line item, which can be found in the table unifier\_budgetitem:

```
LEFT JOIN unifier_budgetitem bi  
ON inv_li.BITEMID = bi.BITEMID  
AND inv_li.BUDGETID = bi.BUDGETID
```

2. Grab the following columns from the table: bi.CODE & bi.ITEM and add them to your SELECT.

## SQL ORDER BY Keyword

The `ORDER BY` keyword is used to sort the result-set by one or more columns.

You can sort the data in the SQL to save the time it takes for BI Publisher to generate the report.

You can sort the data by Invoice (`inv_li_record_no`) and then by Invoice Line Item Number (`inv_li.LI_NUM`): `ORDER BY inv_li_record_no, inv_li.LI_NUM`

---

**Note:** Since Unifier nests the Line Items within the Invoices and in the processes making your table easier to read when troubleshooting, sorting by Invoice is not necessary.

---

## SQL Final Statement

When done with `JOIN` and `ORDER BY`, you can save your statement locally.

Example based on the scenarios presented in the previous topics:

Example of a final Invoice Line Item SQL Statement:

```
SELECT inv_li.RECORD_ID AS inv_li_record_no,
       inv_li.LI_NUM AS inv_li_no,
       inv_li.SHORT_DESC AS inv_li_desc,
       inv_li.UUU_UNIT_PRICE AS inv_li_unit_price,
       inv_li.UUU_QUANTITY AS inv_li_quantity,
       inv_li.AMOUNT AS inv_li_amount,
       sdo.OPTION_NAME AS inv_li_uom,
       bi.CODE,
       bi.ITEM
FROM unifier_ui_lineitem inv_li
LEFT JOIN SYS_DATA_OPTION sdo
ON inv_li.UGENUNITOFMEASUREPD = sdo.OPTION_VALUE
AND (sdo.DATA_NAME = 'Unit of Measure'
AND sdo.REGISTRY = 'unifier')
LEFT JOIN unifier_budgetitem bi
ON inv_li.BITEMID = bi.BITEMID
AND inv_li.BUDGETID = bi.BUDGETID
ORDER BY inv_li_record_no, inv_li.LI_NUM
```

### Creating a New Custom Report

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Custom Reports**.
- 2) Click **New** to create a new Custom Report (With Internal Data Model).
- 3) Enter a name (for example, Invoices) and a description.
- 4) For Report Level, choose **Project** since this report will be run at the Project level.
- 5) For Main View, select the Data View that you created.

---

**Note:** An error message appears if you do not add PROJECT\_ID as one of the columns in your SQL statement. You can always go back to the Data View, mark the PROJECT\_ID as Draft, correct the SQL statement, and re-publish.

---

- 6) Click the **View** tab.
- 7) Click **Add**, on top, to add a new view.
- 8) For Main View, select the Data View that you created.
- 9) Enter a name and a tag for your data set (for example, Inv for Name and Inv for tag. The same name for both fields.).

For the Line Items view:

- 1) Click **Add**, on top, to add a new view.
- 2) For Main View, specify the View Type as a Sub Report View.
- 3) Enter a name and a tag for your data set (for example, Inv for Name and Inv for tag. The same name for both fields.).

Row	View Name	View Type	Data Set Name	Data Set Tag
0	Invoices	Main View	inv	inv
1	InvoicesLI	Sub Report View	LineItem	LineItem

At this point, set the relationship between the Main View and the Sub Report View that you have added.

- 1) Go to the **Data Links** section and click **Add**.
- 2) Link the ID field, from the Invoices Data View, to the RECORD\_ID field, from the Invoices Line Item Data View.

Example

```
Source Data Set: inv
Source Element Name: INV_ID
Target Data Set: LineItem
Target Element: INV_LI_RECORD_NO
```

- 3) Click **OK** to add to add the link.
- 4) Click **Apply**.



## Building Report Template

Before you begin building a report template, you must have completed the steps in the preceding sections: SQL statement: **Writing Your First Statement** > Creating Data Views, Building Custom Report: **Building Report Template** >

You can build a Rich Text Format (RTF) template and upload the template to your Custom Report in Unifier, and generate live reports.

Using Invoice as an example, the following explains how to build a simple RTF template (non-tabular report).

To create a simple RTF template:

- 1) Open Microsoft **Word**.  
The application must have the Microsoft Word BI Publisher plug-in installed. See **Download and Install BI Publisher Desktop for Microsoft Office**.
- 2) Click the **Word BI Publisher** ribbon.
- 3) Click **Sample XML** to import your sample data and wait until the data is loaded successfully.

---

**Note:** Alternatively, you can use a template file (for example, A Word template file from your customer).

---

- 4) Click **Repeating Group** to generate a loop on each Invoice. The Repeating Group window opens.
- 5) In the **For Each** field, enter a value in the Data Set Name for each of the Invoices that you chose, when defining your Custom Report (for example, inv). This does not apply to the Invoices Line Items.
- 6) In the **Group By** field, select a field for your Invoice loop. Use the `INV_ID` because it is a unique identifier for each Invoice.
- 7) (Optional) Insert a page break after each Invoice to keep your report formatted.
- 8) (Optional) Select the Data already sorted option. You can select this option because you have already sorted your data in your SQL statement, using: `ORDER BY`.
- 9) Click **OK**.  
The BI Publisher plug-in application adds a code to the document which includes: a start (for-each), a page break (page break), and an end (end) for your Invoice loop.
- 10) Add a blank line after "for-each" operator to make room for your Invoice information.
- 11) Click the field icon (**ab|Field**) to open the field browser.  
The field browser window enables you to add fields from you XML sample data file.
- 12) After each "for-each" operator, double-click **Inv\_Record\_No** in the field browser.
- 13) Add a hyphen ( - ) [n-dash] after the record number.
- 14) Double-click **Inv\_Title** to add the Invoice title.

Example

```
for-eachINV_RECORD_NO-INV_TITLE
```

```
page breakend
```

15) (Optional) Run the report by clicking PDF on the Word BI Publisher Ribbon (Word will prompt you to save your RTF file if you have not, already).

The first report is now ready.

The report only has the Invoice record number and title for each Invoice in your sample XML (the approved and pending ones because: WHERE inv.STATUS = 'Approved' OR inv.STATUS = 'Pending' in our SQL statement).

You can continue to build on the generated report by adding additional fields from the Upper Form of the Invoices BP, as well as headers, footers, formatting, and so forth.

---

### Creating a Report with Line Items

You can use the Table Wizard to create a report with all the Line Items.

Using Invoice as an example, the following explains how to create a report with Line Items:

- 1) Add a blank line after `for-eachINV_RECORD_NO - INV_TITLE` operator and leave your cursor.
- 2) Click **Table Wizard** on the Word BI Publisher Ribbon.
- 3) Select **Table** as your Report Format and click **Next**.
- 4) Select **/DATA\_DS/Inv/LinItem** as your Data Set (or the name that you had given your Line Item data set).
- 5) Select the fields that you want to add to the table. Since this is for the Invoice line items, you must only add fields that are specific to the line items.

If you need to add a field for "group on" (for example, `Inv_Li_Record_No`), the grouping process is similar to the process explained in the preceding section. Since you have grouped the records by Invoice in the preceding section, you can leave the value blank.

The order of the selected columns must match the order that you want in your table, except for the column that you use for grouping, which is outside the table. In the "Which fields do you want to show in your report" window, match the order as shown here:

```
Inv Li Record No --> In Li Record  
Inv Li No -->Inv Li No  
Inv Li Desc --> Inv Li Desc  
Inv Li Unit Price --> Inv Li Unit Price  
Inv Li Quality --> Inv Li Quality  
Inv Li Amount --> Inv Li Amount  
Inv Li Uom --> Li Uom  
Code --> CodeInv  
Item --> Item
```

- 6) In the "How would you like to group your report" window, leave every option as is because you have already grouped your data by Invoice in the preceding section.
- 7) In the "Which fields would you like to user to sort the data" window, within each table, sort the lines by `Inv_Li_No` (Invoice Line Item Number). Specify that this is a Number so that it is sorted correctly.

8) Click **Finish**.

The Table Wizard inserts the table and the necessary code:

```
for-eachINV_RECORD_No - INV_TITLE
```

Inv Li No	Inv Li Desc	Code	Item	Inv Li Quantity	Inv Li Uom	Inv Li Unit Price	Inv Li Amount
F INV_LI_ NO	INV_LI_D E SC	CODE	ITEM	INV_LI_QU ANTITY	INV_LI_ UOM	INV_LI_UNI T_PRICE	INV_LI_AM OUNT E

page breakend

You must run the report to see what information is generated. While the data is correct, you need to work on formatting the data. See the following topic.

### Formatting Data

To format the data generated:

- ▶ Provide a descriptive text (not SQL column names) for Column titles.
- ▶ Adjust the Column widths.
- ▶ Apply general table coloring (borders and shading, font sizes, cell alignment, etc.).
- ▶ Ensure that the "dollar" format is used for the two price columns (for example, \$110.00). See the details that follow.
- ▶ Add useful information, from the Upper Form of the Invoice, above the table. See the details that follow.
- ▶ Provide a "Total" for the amount column. See the details that follow.

Once finished, generate a PDF and repeat the process if necessary.

To change the formatting of the Price & Amount columns (for example, 110.0 > \$110.00):

- 1) Double-click on **INV\_LI\_UNIT\_PRICE** (the code under the Unit Price field) to launch its BI Publisher properties.
- 2) Change the Formatting Type to **Number**.
- 3) Set the Formatting Format to **#,##0.00;(\$#,##0.00)** (paste in the blue text).
- 4) Repeat the preceding steps for the Amount column.

To add useful information, from the Upper Form of the Invoice, above the table:

---

**Note:** Tables are efficient formatting tool for organizing data from the Upper Form. Include separate columns for the field name (align right) and the field value (align left). You can also hide the borders if you prefer.

---

- 1) Create a 4-row and 2-column table and add field names.
- 2) Place your cursor where the first inserted field value must be entered.

- 3) Click the field icon (**ab|Field**) to open the field browser and add fields from your XML sample data.
- 4) Add useful information such as Creator, Email, and Status (or other fields you added to your SQL statement) above our Line Item Table.
- 5) Double-click on the correct field value from the Field window to add the Title to the report (for example, add Invoice title in the Title field).

To provide a "Total" for the amount column, using Invoice as an example:

- 1) Right-Click somewhere in the last row of your Invoice Line Item table and select **Insert > Insert Rows Below**.
- 2) Highlight all the columns in the new row, except for the last one, and **Merge** the cells (from the right-click menu).
- 3) Click in the newly created cell and enter: Total
- 4) Right-align the cell.
- 5) Place your cursor into your last column of the new row.
- 6) Click the field icon (**ab|Field**) to open the field browser and add fields from your XML sample data.
- 7) Click **Inv\_Li\_Amount** column to highlight.
- 8) Set the calculation (at the bottom) to **Sum**.
- 9) Click **Insert** to add the calculation into the table.
- 10) (Optional) Select the Total row and make the text bold.

## Adding Summary Page to Report

Your report lists details. The Summary page contains a table with a summary of all the details (for example, Invoices) as well as charts to add graphical information.

To add a summary page to your report, using Invoice as an example:

### 1) Add Project information.

In preceding sections, you have set your template to loop through each Invoice. In order to create a summary page, you need to include the following information:

- a. Using Word, insert a page break before the "for-each code" at the top of the document. Do not use the page break command in BI Publisher.
- b. Add a title to the Summary page (for example, Invoice Report).
- c. Click the field icon (**ab|Field**) to open the field browser and add information about the project, if you have not done so in your SQL statement.
- d. Add additional information about the Project below the title (in a table) such as the Project number, Project name, Start/End dates and Initial/Revised budgets.
- e. Format dollar values as numbers with the formatting **\$\$,##0.00;(\$,##0.00)**. You can format dates as type Date using date formatting options such as: MM/dd/yyyy

### 2) Add Summary table.

A summary table contains the Invoice data that goes in the report. You can use the Table Wizard, similar to the process in the "Creating a Report with Line Items" section.

- a. Place the cursor on a new line under the table on the title page, where you want your table of Invoices to appear.
- b. Click **Table Wizard** on the Word BI Publisher Ribbon.
- c. Select **Table** as your Report Format and click **Next**.
- d. Select **/DATA\_DS/Inv** as your Data Set (or the name you used in your Invoice data set).
- e. Select the fields that you want to add to the table. Since this is for the Invoice, you must only add fields that are specific to the Invoices and not the Invoices Line Items.  
You do not need to group because your SQL statement provides one line per Invoice.
- f. Sort by Invoice Record Number, in the "Which fields would you like to use to sort the data?" window.
- g. Click **Finish**. The Table Wizard inserts the table and the necessary code.
- h. Format the data. See **Formatting Data** for details on how to format the data.

## Adding a Chart

Using Invoice as an example, you can include a chart in the summary page to demonstrate how the Invoices are split.

There are several chart types available in BI Publisher. The following is for creating a Pie-chart.

To add a pie chart:

- 1) Place the cursor above the summary table. The goal is to include the chart between the Project summary table and Invoice summary table because the table can get long and expand to the next page.
- 2) Click **Chart** on the Word BI Publisher Ribbon.
- 3) Set the Chart Type (on the right) to Pie Chart.
- 4) (Optional) Select one of the Chart Styles.
- 5) Drag **Inv\_Amount** from the Data tree to the Values box to ensure that the size of each pie slice is determined by the dollar amount of the Invoice.
- 6) Drag **Inv\_Title** from the Data tree to the Labels box to ensure that the:
  - ▶ Pie slices are determined by Invoice
  - ▶ Invoice Title appears in the legend
- 7) (Optional) Click **Preview** (top right corner) to see a preview of the chart and make changes if necessary.
- 8) (Optional) Use the Properties table on the right side to set Chart Title, Legend properties, etc.
- 9) Click OK. You change the chart settings by double-clicking the chart in the template.
- 10) (Optional) Add spacing between the chart and the two tables and center-align the chart.

## Adding Headers and Footers

Use a 3-column table in the header and footer of your template to allow for a uniform adjustment of items such as titles, logos, and page numbers. Use Microsoft Help to learn how to add the first page to your document that does not include Header or Footer.

## Adding Images from Unifier

**Note:** Microsoft Word does not support form fields in the header and footer. If need to add an image to the header or footer of your Custom Report and you want the image to repeat on each page, see the "Adding BI Fields to the RTF Header or Footer" section.

To add an image (Examples: Company logo, Shell image, or image picker from a BP record: jpg, gif, or png) from Unifier into your Custom reports, use the Sample XML file (Sample Data) that you have created and exported into Unifier.

**Note:** Company logo cannot be displayed in Unifier interface. Create a company-level business process to place your Company logo.

The following shows the procedure by using an example:

- 1) Open the XML file.
- 2) On top, identify the XML elements that are blank (shown in **bold** in the following code).

```
<?xml version="1.0" encoding="UTF-8"?>
<DATA_DS>
<uuu_p_reportByF></uuu_p_reportByF>
<uuu_p_timeZoneF></uuu_p_timeZoneF>
<uuu_p_diffMinutesF>0</uuu_p_diffMinutesF>
<uuu_p_sysyTimeZoneID></uuu_p_sysyTimeZoneID>
<uuu_p_searchConditionF></uuu_p_searchConditionF>
<uuu_p_urlF></uuu_p_urlF>
<uuu_p_sessionIdF></uuu_p_sessionIdF>
<uuu_p_companyRegistryF></uuu_p_companyRegistryF>
<inv>
  <PROJECT_ID>1012</PROJECT_ID>
  <INV_ID>1</INV_ID>
  <INV_RECORD_NO>INV-001</INV_RECORD_NO>
  <INV_TITLE>Lumber Contract - Initial Invoice</INV_TITLE>
  <INV_STATUS>Approved</INV_STATUS>
```

**Note:** At runtime, these blank elements are fully populated with information about the Unifier server base URL, the User's session ID, and the Unifier company registry.

- 3) Using the included parameters, plus the ID of a specific image (the image that you want), construct a URL of the format:

```
<uuu_p_urlF>CompanyRegistry=<uuu_p_companyRegistryF>&sessionId=<uuu_p_sessionIdF>&id=<image_ID>
```

---

**Note:** To build a similar URL in your BI Publisher report, ensure that you have the Image ID because the other three parameters have already been identified.

---

4) Access the Image ID of the image that you want and:

---

**Note:** If applicable, you can find the Company logo Image ID in the companylogo column of the table sys\_company\_info.

---

a. JOIN the information into your existing Data Views.

or

b. Add the information as a new Data View, which you can add as a Sub-Report View to any Custom Report. The SQL to create a new Data View:

```
SELECT companylogo
FROM sys_company_info
WHERE companyregistry = 'unifier';
```

5) Define the variables:

Once you have an Image ID, you must define the variables needed to build the image URL by hiding the variables in a Data Field:

a. Add a data field somewhere at the top of your report. This can be any field. You only need a placeholder for your variables.

b. Double-click on the newly added data field and click the **Advanced** tab. Delete the text in the code box, if any.

c. Add the following text into the code box:

```
<?variable@begin:uuu_p_urlF;(./uuu_p_urlF)[1]?>
<?variable@begin:uuu_p_companyRegistryF;(./uuu_p_companyRegistryF)
)[1]?>
<?variable@begin:uuu_p_sessionIdF;(./uuu_p_sessionIdF)[1]?>
<?variable@begin: image;(./DATA_DS/co/COMPANYLOGO)?>
```

---

**Notes:**

- If you are adding a Shell image or Image Picker Data Element, you do not need that last line. Add the last line only if you have created a Company log Data View (If applicable, you can find the Company logo Image ID in the companylogo column of the table sys\_company\_info).
  - The example code presumes that you added an unlinked Sub Report View with the Data Set Tag “co” (for Company). You can change the Data Set Tag “co” (for Company) to the value that you have in the last column of Company Logo row in the Views used as data sets table on the Views tab of the Custom Report dialog.
  - If you want to insert the Project Shell ID, you must access that variable. Depending on where you are in your grouping, the variable can be: <?variable@begin:image;(SHELLIMAGE)[1]?>
-



To access the Project or Shell Image ID:

- 1) Go to table: **unifier\_shell\_info**.
- 2) Identify the **shellimage** column of the table. The Project or Shell Image ID is in the shellimage column.

You can JOIN this table to your main report view based on the **unifier\_shell\_info.pid** column, which contains the project ID.

After you defined your variables, you can add an image. The BI Publisher leverages the Alternative Text of an image to dynamically set the image source. For more information, refer to the *BI Publisher Report Designer's Guide*.

To add a dummy image:

- 1) Create an image (for example, Dummy\_Image.jpg) and size it appropriately (for example, 300 x 200 px).
- 2) Right-click on the image and select Size...
- 3) Click the Alt Text tab of the Size dialog
- 4) Paste the following into the Alternative Text  
`box: url: {concat($uuu_p_urlF, 'companyRegistry=', $uuu_p_companyRegistryF, '&sessionId=', $uuu_p_sessionIdF, '&id=', $image)}`

---

**Note:** The last parameter (\$image) was set as a variable to either the Company logo or the Project or Shell image. You must adjust the parameter if you want to include both images. Ensure that you use separate variable names for each.

---

To test an image:

The three parameters that you used to build your URL to the image are not downloaded as part of the sample data:

```
uuu_p_urlF
uuu_p_sessionIdF
uuu_p_companyRegistry
```

You must upload your RTF template to Unifier, publish the Custom Report, and then run the report to ensure that your image was inserted successfully.

## Adding BI Fields to RTF File Header or Footer

Microsoft Word does not support form fields in the header and footer. As a result, you need to populate the headers and footers with text or images from Unifier. Refer to the *BI Publisher Report Designer's Guide* for more details.

To populate the headers and footers with text or images from Unifier, follow these steps:

- 1) At the top of our RTF template (in the body, not the header), place the following tags:  

```
<?template:header?>  
<?end header?>
```
- 2) These tags form the start and end of our header. In between them, place the text and images want to include in the report header. Use a 3-column table in the header and footer of your template to allow for a uniform adjustment.
- 3) Double-click into the header of the document. Ensure that none of the BI Publisher fields are highlighted.
- 4) Add the text: `<? call@:header?>` to place everything in the tags added above into the header at report runtime.

## Importing Template into Unifier

After you have completed creating your Template, you can upload your template into Unifier.

To upload your template into Unifier:

---

**Note:** Invoices is used as an example.

---

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Custom Reports**.
- 2) Open your Invoices Custom Report.
- 3) In the **Report File** tab (consisting of Add, Modify, Remove, and Download options)
  - a. Click **Add** to open the template window.
  - b. Enter information in the following fields: Template Name, Template Type, and Report Layout File.
    - To localize the Custom Report output for different languages, you can provide XLIFF files for RTF-type templates here.
    - The Template Name field accepts spaces and other characters.
  - c. Click **Browse** to select the template file for uploading.
  - d. Click **OK** to confirm the upload.
- 4) Click **Browse** and upload the RTF file.
- 5) Click **OK** to close the window.
- 6) **Publish** your report by selecting your report from the log and selecting **Status** > **Published** from the toolbar.

Your report is added to list and Users can access the report from Projects, if they have the appropriate permissions.

### Adding Report to Navigator

To add your report to the Navigator:

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Navigator** (User mode).
- 2) Open your Project or Shell Navigator. You must be able to see your Custom Report on the right-hand side. If you do not see your Custom Report ensure that you have published the report. See *Importing Template into Unifier*.
- 3) Add your Custom Report to the Reports section on the left-hand side (in the Navigator, you can create a new subfolder under Reports called Advanced Reports).
- 4) Click **OK** to close the window.
- 5) Deploy the Navigator by highlighting it and clicking **Deploy** from the toolbar.

### Setting Permissions on Report

You (Company Administrator) must give permissions to the Users so the Users can run the new Custom Report.

You can give permissions using a Project template (to distribute the permission to all projects), or do it on case-by-case bases, one Project at a time.

To set permissions:

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Company Sponsored Shells** > **Projects**.
- 2) Find your Project (the project that you want to add the Custom Report to) and open.
- 3) Click **Access Control**.
- 4) Go to the Custom Report, click the report to open the Permission Settings window.
- 5) Add View access for any Users or Groups that you want to be able to run the Custom Report in your Project.

Repeat the preceding steps if you want to add your Custom Report to other Projects.

### Running the Report

To run your Custom Report:

- 1) Navigate to you Project that has your Custom Report (for example, The Project with Invoice BPs created and in an approved or pending state)
- 2) Run the report.

## Advanced BI Publisher Functions

The following topics explain the advanced functions of the BI Publisher.

### Conditional Formatting

With BI Publisher, it is easy to use conditional formatting to highlight table cells or entire table rows using conditional formatting.

Example

Highlight invoices with an amount over \$10,000.

### Highlighting a Table Cell

1) After you create a table, place the cursor in the cell where want to apply conditional formatting.

---

**Note:** The cell must be be either text or a Data Field.

---

- 2) Click **Conditional Format**. The BI Publisher Properties window open on the Properties tab.
- 3) From the Data field drop-down list select the data element that you want to evaluate to determine the conditional highlighting. This does not need to be the same data field in the cell that you are trying to highlight.
- 4) Specify whether that Data Field is a Number or Date/Text Field.
- 5) Enter the conditions for this Data Field using the pertinent drop-down list.
- 6) For each condition, specify the formatting that you want to be applied when that condition is met.

Only two conditions can be entered by using this window. If you have more than two conditions, you can click on the Advanced tab and copy/paste the conditions already entered to create additional conditions. Ensure that you copy an entire “if” statement, up to and including the “<?end if?>”

Example

```
<?if:number(INV_AMOUNT)>10000?><?attribute@incontext:background-color; '#FFB9B9'?><?end if?>
```

### Highlighting an Entire Table Row

To highlight an entire table row, follow the preceding instructions; however, ensure that you select **Apply to Entire Table Row**.

---

## Search Parameters and Additional Parameters

When creating, you can specify two types of parameters before running a report:

- ▶ **Search Parameters**  
Use these to filter the SQL results. Data View result rows that do not match the filter will not be sent from Unifier to BI Publisher.
- ▶ **Additional Parameters**  
Use these to pass additional parameters for BI Publisher to consume at runtime. All values are sent from Unifier to BI Publisher for further operation.

### Search Parameters

Search parameters allow the report runner to filter the data that gets sent to BI Publisher. For example, a Contract Report may need to be filtered by Vendor or Contract Type. A Ball-in-court report may be filtered for a specific task assignee, or task type.

At runtime, the report runner can select or multi-select from a list of values based on the search parameters specified in the report configuration. This means that Unifier basically runs the Data View before the report is run to give the report runner a list of the SQL results. He can then select or multi-select values from this initial run to filter what will appear in the report output. For more information on the Search Parameters, refer to the Unifier Help topic: Add query parameters to custom report (Query tab).

#### Example

The following are instructions for filtering your Invoices Report on Invoice Vendor:

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Custom Reports**.
- 2) Put your Invoices Custom Report in Draft mode and open the report.
- 3) Click on the **Query** tab.
- 4) Click **Add**.
- 5) Populate the field as follows:
  - ▶ Element Name: VENDOR
  - ▶ Label: Vendor
  - ▶ Operator: Equals
  - ▶ Source Type: View
  - ▶ Select View: Invoices
  - ▶ Value Column: VENDOR
  - ▶ Label Column: VENDOR
  - ▶ Selection Type: Multiple
- 6) Click **OK** to add the Query.
- 7) Click **OK** to save your changes.
- 8) Publish the report.

---

**Note:** You can only add queries on your Main View (not Sub Report Views).

---

Upon running the report, the report runner display the Invoice Query window. When you click Select, Unifier runs the Data View that you selected (Invoices) to get a list of all the VENDORS that would be returned if there were not filters. Multi-select your Vendors by using the Ctrl key. Enter text in your report to indicate that it was run using a query. We can access the value specified by the report runner via a top-level field.

### Additional Parameters

Additional parameters allow the report runner to specify parameters that can be used at report runtime to alter how the data is displayed.

Unlike Search Parameters:

- ▶ Additional Parameters only support entering text. You cannot select or multi-select values from Unifier.
- ▶ Additional Parameters allow us to specify a default value so that the user only needs to change the value if needed.

A good example of where to use Additional Parameters is for calculations, for example, when you enter a target future exchange rate. You can also use Additional Parameters for conditional highlighting so that only rows over/under a certain value are highlighted.

---

**Note:** In the section Conditional Formatting, You need to hard-code a value (for example, 10,000).

---

The following are instructions for conditionally highlighting Invoices based on amount in our Invoices Report:

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Custom Reports**.
- 2) Put your Invoices Custom Report in Draft mode and open the report.
- 3) Click the **Parameters** tab.
- 4) Click **Add**.
- 5) Populate the field as follows:
  - ▶ Row: 0
  - ▶ Editable: [Select]
  - ▶ Hidden: [Do not select]
  - ▶ Name: Amount
  - ▶ Label: Highlight Amount
  - ▶ Default: 10000

---

**Note:** When running the report, the selections add parameter called 'Amount', with label 'Highlight Amount' and an editable value of 10000 in the Additional Parameters box.

---

- 6) Click **OK** to save your changes.
- 7) Publish the report.

If you run the report at this stage, you see no changes because unlike Search Parameters, all the same data is passed to BI Publisher. You need to add some additional logic to your RTF template to use this new 'Amount' parameter.

- 1) Sign in to **Unifier** as a Company Administrator and go to the **Company** tab (Company Workspace), ensure that you are in Administration mode > **Configuration** > **Custom Reports**.
- 2) Put your Invoices Custom Report in Draft mode and open the report.
- 3) Download the new Sample Data for your project. A new top-level parameter is generated in your Sample XML: `<uuu_p_Amount>10000</uuu_p_Amount>`
- 4) Open your RTF template and import the new Sample XML file so you can add the logic.
- 5) Define a new variable somewhere at the top (as we did in Defining the Variables) as follows: `<?variable@begin:uuu_p_Amount;(./uuu_p_Amount)[1]?>`

To use the variable, you can call `$uuu_p_Amount` instead of your hard-coded 10000 in our conditional statement (assuming you already followed the instructions in Conditional Formatting).

- 1) Double-click on the 'C' Conditional Formatting field that you added to the Amount cell in the Conditional Formatting section
- 2) Ensure that you see the following on the Advanced tab: `<?if@row:number(INV_AMOUNT)>10000?><?attribute@incontext:background-color; '#F8DADB'?><?end if?>`
- 3) Replace the '10000' with '\$uuu\_p\_Amount': `<?if@row:number(INV_AMOUNT)>$uuu_p_Amount?><?attribute@incontext:background-color; '#F8DADB'?><?end if?>`
- 4) Click **OK**.

If you run the report, you see the same behavior as before because the value in your Sample XML is the same as the value you hard-coded before (10000). To test:

- 1) Open the Sample XML file that you have downloaded (in notepad) and update the value of `uuu_p_Amount` to a value lower (for example, 5000).
- 2) Save the XML file and re-run the report. The Invoices over \$5,000 are now highlighted in red.
- 3) Upload the new RTF template into your Custom Report in Unifier.
- 4) Click **OK** to save your changes.
- 5) Publish the report.
- 6) Proceed to test the Custom Report in Unifier. Since the 'Amount' parameter is editable, you can update the parameter before running the report.

## Adding Permissions to Run BI Publisher Reports

These steps apply to sample custom reports and may not apply for every report.

To add permissions to run reports:

- 1) Go to the **Company Workspace** tab and switch to **Admin** mode.
- 2) Select the **User Mode Navigator**.
- 3) Open the **Project / Shell** navigator.
- 4) Under **Reports**, create a **Custom Reports** node.
- 5) Change the icon to **u\_report\_select.gif**.
- 6) Under the **Custom Reports** node, add the new report.
- 7) Click **OK**.
- 8) Highlight the **Project / Shell** navigator.
- 9) Select **Deploy** to apply changes.
- 10) Go to the **Company Workspace** tab and switch to **Admin** mode.
- 11) Navigate to **Company Sponsored Shells, All Projects**.
- 12) Highlight **All Projects** in the right window pane and select **Open**.
- 13) Select **Access Control**.
- 14) Navigate to **User Mode Access, Reports, Custom Reports**.
- 15) Select the custom report.
- 16) Add users to allow access to reports.
- 17) Click **Apply** and **OK**.

## Running the BI Publisher Report in Primavera Unifier

To run the BI Publisher Report in Unifier:

- 1) Sign in to your Unifier environment.
- 2) Select a Project or Shell.
- 3) Ensure you are in **User** mode.
- 4) Under the Project/shell navigation tree, select **Reports, Custom node**.
- 5) Select a report and a dialog box will open.
- 6) In the dialog box, enter the search conditions and click **Report** to run the report.



## User Productivity Kit Setup Tasks

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User Productivity Kit (UPK) is an Oracle product that you can purchase and use to create instructions (tutorials) to demonstrate how to perform tasks in other Oracle products. You can create published player files to demonstrate Primavera product functionality in the cloud.

To connect UPK and a Primavera product in the cloud:

- ▶ Submit a service request in My Oracle Support.

To access your published player files in the cloud:

- ▶ Upload your published player files to a locally hosted web server and then submit a service request in My Oracle Support to configure its connection to the cloud.
- ▶ Submit a service request in My Oracle Support with your published player files. Oracle will host your published player files and provide you access to them in your cloud environment.



# For More Information

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## Where to Get Documentation

The complete documentation set that you will need for your cloud solution can be found on the Oracle Technology Network (OTN) at:

<http://docs.oracle.com/en/>

From this location you can view the latest product documentation which can be updated to contain critical corrections and enhancements. Since this guide has been designed for cloud administrators, cloud administrators can ignore the installation, system configuration, and system administration documentation that they might find in the product libraries on OTN.

The following table lists the product libraries that are associated with your cloud solution, the release level for the products that you are using, and the URL of the product library:

Product Library	Release Level	URL
Oracle Primavera	15 R2	<a href="http://www.oracle.com/tech-network/apps-tech/primavera/documentation/index.html">http://www.oracle.com/tech-network/apps-tech/primavera/documentation/index.html</a>
Oracle Fusion Middleware (Oracle Identity Manager)	11g R2 (11.2.2)	<a href="http://www.oracle.com/tech-network/middleware/id-management/documentation/index.html">http://www.oracle.com/tech-network/middleware/id-management/documentation/index.html</a>
BI Publisher	11g (11.1.1)	<a href="http://www.oracle.com/tech-network/middleware/bi-publisher/documentation/index.html">http://www.oracle.com/tech-network/middleware/bi-publisher/documentation/index.html</a>
BPM	12c (12.1.3)	<a href="http://www.oracle.com/tech-network/middleware/bpm/documentation/index.html">http://www.oracle.com/tech-network/middleware/bpm/documentation/index.html</a>

## Distributing Information to the Team

You can copy the online documentation to a network drive for access by project participants. Team members can then view or print those portions that specifically relate to their roles in the organization. However, Oracle recommends that you always use the online documentation since it can be updated to include critical corrections and enhancements.

## Where to Get Training

To access comprehensive training for all Primavera products, go to:

<http://education.oracle.com>

### Oracle Learning Library

The Oracle Learning Library (OLL) provides online learning content covering Primavera products. Content includes whitepapers, videos, tutorials, articles, demos, step-by-step instructions to accomplish specific tasks, and self-paced interactive learning modules.

To access the learning library's Primavera content, go to:

<http://www.oracle.com/oll/primavera>

To access UPK content for Primavera Cloud Administration on the learning library, go to:

<http://www.oracle.com/webfolder/technetwork/tutorials/primavera/OnlineLearning/Tutorials/CloudUsers/index.html>

## Where to Get Support

If you have a question about using the Oracle products that you or your cloud administrator cannot resolve with the information in the documentation or help, click <http://support.oracle.com/>. This page provides the latest information on contacting Oracle Global Customer Support, knowledge articles, and the support renewals process. For more information about working with Support, visit <https://support.oracle.com/epmos/faces/DocumentDisplay?id=888813.2> to view **Support Tools & Tips**.

### Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/us/support/contact-068555.html> or visit <http://www.oracle.com/us/corporate/accessibility/support/index.html> if you are hearing impaired.

## Using Primavera's Support Resource Centers

Primavera's Support Resource Center provides links to important support and product information. Primavera's Product Information Centers (PICs) organize documents found on My Oracle Support (MOS), providing quick access to product and version specific information such as important knowledge documents, Release Value Propositions, and Oracle University training. PICs also offer documentation on Lifetime Management, from planning to installs, upgrades, and maintenance.

Visit <https://support.oracle.com/epmos/faces/DocumentDisplay?id=1486951.1> to access links to all of the current PICs.

PICs also provide access to:

- ▶ **Communities** which are moderated by Oracle providing a place for collaboration among industry peers to share best practices.
- ▶ **News** from our development and strategy groups.
- ▶ **Education** via a list of available Primavera product trainings through Oracle University. The Oracle Advisor Webcast program brings interactive expertise straight to the desktop using Oracle Web Conferencing technology. This capability brings you and Oracle experts together to access information about support services, products, technologies, best practices, and more.

# Legal Notices

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Oracle Primavera Cloud Service Administrator's Guide

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