Oracle
Primavera
P6 EPPM System Administration Guide for On-Premises

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Contents

About This Guide

Scope

P6 EPPM system administrators manage and create configurations for your P6 EPPM applications. This guide describes how to perform common system administration tasks using the Primavera P6 Administrator.

Audience

System administrators should use this guide.

Using This Guide

This guide assumes you have installed the Primavera P6 Administrator and other P6 EPPM applications. For more information, see the *P6 EPPM Installation and Configuration Guide*.

Primavera P6 Administrator Setup Tasks

Primavera P6 Administrator is the primary application that system administrators use to review, modify, add, and delete P6 EPPM configurations. P6 EPPM configurations are stored in the database that was specified during the installation of P6. These configurations contain all of the settings used to run the application server for P6.

Caution: Many of the defaults are set to maximize the performance of your database. You should change them only if you are certain a change is needed.

In This Section

Launching the Primavera P6 Administrator

On-Premises

You can run the Primavera P6 Administrator locally or remotely through a browser. The installation for P6 sets the default URLs for remote access to the Primavera P6 Administrator. You can use the application server's configuration utility to change the listen port number and context root. After launching the Primavera P6 Administrator, you will need to enter an Admin Superuser name and password.

Cloud

Submit a Service Request in My Oracle Support to request access to Primavera P6 Administrator. You will be provided with a URL for Primavera P6 Administrator for your environment. After launching Primavera P6 Administrator, you will need to enter the name and password for a user which has been granted access to Primavera P6 Administrator.

Launching the Primavera P6 Administrator Locally with Windows for On-Premises

To launch the Primavera P6 Administrator locally with Windows:

1) Go to the P6 home directory (for example, C:\P6EPPM_1\p6).
2) Run **adminpv.cmd**.
3) Log in as an administrator.

Launching the Primavera P6 Administrator Locally with UNIX or Linux for On-Premises

To launch the Primavera P6 Administrator locally with UNIX or Linux:

1) Change to the **p6home** directory that you specified when installing P6. For example: `/usr/P6EPPM_1/p6`
2) Run **adminpv.sh**.
3) Log in as the privileged database user (for example, privuser).

Launching the Primavera P6 Administrator Remotely for On-Premises

To launch the Primavera P6 Administrator remotely:

1) Launch a supported browser.
2) Go to **https://<server IP:listenport>/<ContextRoot>/admin.jsp**
   where **<serverIP:listenport>** is the IP address and listen port for the P6 server and **<ContextRoot>** is p6 by default.
3) Log in as a user with Admin Superuser privileges.

Notes:

- Only users with Admin Superuser privileges can log in to the Primavera P6 Administrator remotely. If you are logged in to P6, but do not have the appropriate privileges to edit settings in the Primavera P6 Administrator, you will be redirected to the P6 login page.
- The Privileged database user (for example, privuser) can still access the local Primavera P6 Administrator, but will not have access to the remote Primavera P6 Administrator.

About the P6 EPPM System Administration Guide

Scope

This guide contains information about how you can:

- Review, modify, add, and delete P6 EPPM configurations using Primavera P6 Administrator
- Setup and maintain each of the P6 EPPM applications
- Troubleshoot P6 EPPM

Audience

This guide is intended to be used by experienced system administrators, network administrators, or database administrators.

Reviewing and Modifying Configurations for P6

The Primavera P6 Administrator presents configuration settings for your P6 EPPM applications. The Configurations and Authentication tabs display the current configurations and settings. The Log tab displays a history of configuration changes.

Tips

- Position the mouse over a setting to read the description.
- You cannot edit the Factory Default configuration settings. You can only modify custom configurations.
- The Primavera P6 Administrator warns you of any out of date configurations. Oracle recommends that you update these configurations.
- If you create a new configuration, you need to click **Update to latest version** before changing your settings in the new configuration.
- To find a setting quickly, you can use the search box below the Configurations drop-down list. Clicking the search button or hitting enter will open every file with that setting name.

Changing a Setting in the Primavera P6 Administrator

To change a setting value:

1) Select either the **Configurations** or the **Authentication** tab to display a hierarchical view of the settings.
2) Select a heading to display the settings.
3) Select the field or the drop-down list that you want to change.
4) Enter a new value.
5) On the **You have unsaved changes** context menu, select **Save Changes**.

Returning a Primavera P6 Administrator Setting to its Default Value

To return a setting to its default value:

1) Position your mouse over the setting to display the tool tip.
2) Enter the **Default** into the field.
3) On the **You have unsaved changes** context menu, select **Save Changes**.

Adding Configurations to the Primavera P6 Administrator

Duplicate an existing configuration to create a new configuration. To duplicate a configuration:

1) Select **Manage Configurations** in the **Configurations** list.
2) Select the menu button next to a configuration and select **Duplicate**.
3) Double-click the new configuration.
4) Enter a name for the configuration.
5) Select **Save**.
6) Edit settings as needed.
7) Click **Save Changes**.

Tips:

- To create a new configuration based on default settings, duplicate the **Factory Defaults** configuration.
- If you create a new configuration, you must click **Update to latest version** before changing your settings in the new configuration.

Adding Database Instances to a Configuration in the Primavera P6 Administrator for On-Premises

To add a new database instance to a configuration, duplicate an existing instance. To duplicate a database instance:

1) Select **Database**.
2) In the **Instance** drop-down list, select **Manage Instances**
3) Select the menu button next to a configuration and select **Duplicate**.
4) Enter a unique name for the new instance.
5) Select **Save**.
6) Edit **Database** settings as needed.
7) Click **Save Changes**.

Deleting Configurations and Database Instances for P6 in the Primavera P6 Administrator for On-Premises

To delete a configuration or database instance:

1) Select the configuration or database instance you want to delete.
2) Right-click the configuration or database instance and select **Delete**.

Tips:

- You cannot delete the Factory Defaults configuration. You can delete any custom configuration, but not all of them. You must always have one custom configuration.
- You can delete any database instance associated with a configuration, but not all of them. Each configuration must have at least one database instance.
- You can delete the database that you specified during the database configuration. If you do so, you will need to run the Database Configuration wizard again. See ***About the Database Configuration Wizard for P6*** (on page 84).

Exporting Configurations Using the Command Line for On-Premises

To export a P6 configuration using the command line:

```
adminpv -CopyConfig "<CurrentConfig>" "<ExportConfig>"
```

where `<CurrentConfig>` is the name of the configuration you want to export (by default, Primavera P6 Configuration) and `<ExportConfig>` is the name of the exported configuration.

About the Configurations Tab in the Primavera P6 Administrator

Many of the settings in the configurations tab are already set for you. You should change them only if you are certain a change is needed.

Use the configurations tab to:

- Create new configurations.
- Delete configurations.
- Configure your settings for your applications.

Configuring Localization Settings

Your localization settings specify the language you see when you log in to P6 and the country for server string constants. The Java application uses this setting to ensure all instances of P6 EPPM will use the same localization settings.

Notes:

- The localization used by your operating system will have priority for the language used. The localization setting in P6 ensures P6 EPPM uses your preferred language if the JVM fails to recognize your operating system's localization settings.
- If you change the localization of P6 on the login page, you will only change the language for your P6 user interface. It does not translate

your data or change the convention followed by your region.

- Changes to these settings require you to restart the P6 server.

To set your language and country:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Localization**.
   a. In the **System Language** drop-down list, select your language. The default value is English (en).
   b. In the **System Country** drop-down list, select your country. The default value is US.

> **Tip**: Go to http://download.oracle.com/javase/1.5.0/docs/guide/intl/locale.doc.html or the *Tested Configurations* document for a list of supported languages and countries.

Configuring Session Management Settings

The Maximum Session Timeout setting is the maximum length of time that a user can connect to the application server (regardless of activity) before P6 EPPM times it out.

To set your session timeout:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Session Management**.
4) In **Maximum Session Timeout**, enter the amount of time a user session can remain open before it times out.

   The default value is 1d.

   Enter a value between 1m and 24d.

> **Note**: Changes to this setting require you to restart the P6 server.

Configuring Database Instance Settings for On-Premises

You will use the database instance settings to specify information about your database, such as name, description, and schema.

To set your database instance settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database/Instance[n]**.
   a. In the **Name** field, enter the name of this database instance.

Notes:

- This determines how the database instance name will appear on the P6 login page.
- The name can be a maximum of 32 characters.

b. In the **Description** field, enter a description of this database instance.

Note: The description can be a maximum of 128 characters.

c. In the **Public Group ID** field, enter the database group ID of the privileged user account that will access the database.

The default value is 1.

d. In the **User Name** field, enter the name used to establish a connection to the database.

The default value is pubuser, but if you created a custom Public User name, you must use your custom name.

e. In the **Password** field, enter the Public User password used to establish a connection to the database.

f. In the **Auto Start Services** field, select **true** to automatically start all services for this database when the application server starts. When this is true, all job services with a Concurrent Threads setting greater than zero will start when the application server starts.

Set to true if you will use the Summarize or Apply Actuals features in P6 Professional.

If set to false, you must manually log in to the application before the services will start.

Note: If you set **Auto Start Services** to false, job services will not start until someone logs in to the application for the first time.

About Database Instance Settings

If you have more than one database instance for your configurations, you will see them all under the database folder for your configuration. You can configure these settings for a database instance:

- Database information, such as name, schema, and public group ID
- Driver Class and URL
- User Security
- Connection Pool
- Content Repository, such as Oracle WebCenter Content Core Capabilities (formerly Universal Content Management), Microsoft SharePoint, Oracle Database, and CMIS-compliant content repository
- AutoVue
- Session Settings
- Cost Based Optimization settings
- Oracle Analytics Server
- BPM Settings

Configuring Driver Class and URL for Database Instance Settings

The Driver Class and URL settings are where you configure the Java class and database URL that will connect to P6 EPPM.

To set your Driver Class and URL settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **Driver Class & URL**.
   a. In the **Java Class** field, enter the database driver class used for communicating with the database. Your options are:
      - oracle.jdbc.driver.OracleDriver
      - com.microsoft.sqlserver.jdbc.SQLServerDriver
   b. In the **URL** field, enter the database URL used to establish a connection to the P6 EPPM database.

      Oracle example:

      jdbc:oracle:thin:@<Host_Name>:<Database_Port>:<Database_Name>

      Oracle Autonomous Database example:

      jdbc:oracle:thin:@<servicename>?TNS_ADMIN=<unzipped_wallet_path>

      Microsoft SQL Server example:

      jdbc:sqlserver://<Host_Name>:<Database_Port>;database=<Database_SID>;

      Notes:

      - If you upgrade your database and this database connection gets disconnected, you can right-click on the **Driver Class & URL** node to reconfigure your database connection. When you right-click on the node, click **Configure** and the **Configure URL** dialog box will appear.
      - You can also define a custom Oracle/MSSQL driver class from the **Configure URL** dialog box. The jar file for your custom driver class should exist in the application server classpath. Oracle recommends copying the driver jar file to the `<WebLogic_Home>\user_projects\domains\your_domain\lib` file.

Configuring User Security for Database Instance Settings

These settings let you specify how many times users can log in before they are locked out and for how long the users will stay locked out. You can also specify whether to allow multiple user or single machine sessions.

To set your database instance settings:

1) Open the Primavera P6 Administrator.

2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **User Security**.

> **Note**: Changes to these settings require you to restart the P6 server.

a. In the **Log Login Attempts** field, select whether login attempts to P6 are tracked in the logs. You can choose to log the following:
   - None
   - Failed Attempts
   - Successful Attempts
   - All

b. In the **Login Lockout Count** field, enter the number of times a user can attempt to log in before the account locks.

   The default value is 5.

   Enter a value between 0 and 100000.

> **Notes**:
>
> - A setting of "0" allows an unlimited number of attempts.
> - The count resets after each successful login.

c. In the **Login Lockout Duration** field, enter the length of time that a user is blocked from logging in to P6; starts when the user exceeds the Login Lockout Count.

   The default value is 1h.

   Enter a value between 0 and 24d.

> **Notes**:
>
> - The Admin Superuser can override this setting if they manually reset a user's session. See the *Resetting User Sessions* section of the *P6 EPPM Application Administration Guide* for details.

d. In the **Allow Multiple User Sessions** field, select whether a single user can simultaneously log in to P6 on different machines.

   The default value is Yes.

   You can select one of the following:
   - Selecting "Yes" allows a single user to log in multiple times on the same machine or different machines.

Notes: The following restrictions apply when you select "Yes" for multiple user sessions:

- Users must use Microsoft Edge or Google Chrome when logging in more than once on the same machine. See the Tested Configurations document for supported versions.
- If you want users to log in multiple times on the same machine (either with the same user name or with different user names), you must set the **Allow Multiple User Sessions** setting to **Yes**. The other settings will not allow the user to log in multiple times.

- Selecting "No" allows a single user to log in only once with the same user name. If the user tries to log in again while another session is active, the log in will fail. A session can still be active if the user has closed the browser without logging out of P6. The user will have to wait until the session resets before they can log in again.
- Selecting "Single Machine" allows a user to log in once on a machine. The user can log in again on the same machine if they close their browser without logging out; they will not have to wait for the session to reset. If they close their browser without logging out, they can immediately log in again on the same machine they were using; the user won't be able to log in on a different machine unless they wait for the session to reset.

Configuring Connection Pool for Database Instance Settings

The connection pools create and open database connections when they are first needed. When you start the P6 EPPM server, it will allocate one or two connections for initialization routines. The server will allocate and open more connections when the pool cannot satisfy requests from the current pool. You can set the connection pool settings for:

- **Regular** Used for the regular connection pool. Regular is the most used connection pool and has 90%+ of database access.
- **Long Running** Used for the long running connection pool. Use this connection pool for services that will run for a long time.
- **Transactional** Used for the transactional connection pool. Use this connection pool when you have several types of objects saved at one time.

Note: Gantt applets will use the Regular pool when loading data and the Transactional pool when creating or updating data.

A P6 EPPM application operation requires a database connection, so it asks the connection pool for a database connection. If the connection pool contains a connection that is not currently leased, it returns that connection. If it doesn't have a connection available it will check to see if its current allocated count is below 50 (which is the default in the Maximum Connections setting). If the count is below 50, it will create a new database connection and open it, put it in the pool, and return it to the caller. The caller uses the connection, then releases it when they end the session.

If the pool could not allocate a connection because all 50 connections were leased, it will keep checking for the next 30 seconds (which is the default in the Lease Request Wait Timeout setting). If a connection becomes available within that 30 seconds, it will return that connection. If a connection does not become available, it will log the following error: "Error: Lease request timeout while waiting for a connection to become available. Database <dbname>" and the caller will have to try again at a later time.

To set your connection pool settings:

Notes:

- The defaults will provide optimal performance in most environments. Change them only if you are certain a change is needed. Contact My Oracle Support for more information.

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **Connection Pool(aaa)**.

Note: Changes to these settings require you to restart the P6 server.

a. Select **Trace SQL** to trace all SQL sent to the database.

   The default is unselected.

b. Select **Renewable Leases** if you want connection leases renewed when database statements are completed within the MaxLeaseDuration time period. When selected, the code can hold onto the connection as long as it needs, provided SQL statements finish within the MaxLeaseDuration period. When selected, the connection is revoked if no SQL statements are issued within the MaxLeaseDuration period or if one statement takes longer to run than that period.

   Leave this field blank if you want each connection to be leased only for the MaxLeaseDuration period.

   The default for Connection Pool (Regular) is false. The default for Long Running and Transactional is true.

c. In the **Resize Rate** field, enter the timeout period when the system will close all of its unused connections. For example, if the resize rate is 4 minutes, then every 4 minutes the connection pool will attempt to close all of its unused connections.

   The default value is 4m.

   Enter a value between 4m and 12h.

d. In the **Maintenance Frequency** field, enter how often maintenance will run to ensure leases have not exceeded the maximum duration.

   The default value is 1m.

   Enter a value between 10s and 1h.

e. In the **Lease Request Wait Timeout** field, enter the amount of time a request for a database connection will wait before timing out.

If a request for a database connection times out, the user can reload the page and attempt to connect to the database again.

The default value is 30s.

Enter a value between 5s and 2h.

f. In the **Maximum Connections** field, enter the maximum number of connections the server will have to the database.

The default for Regular and Transactional is 50 and the default for Long Running is 100.

Enter a value between 5 and 15000.

g. In the **Fetch Size** field, enter how many rows to pull from the database and send to the application server.

The default value is 120.

h. In the **Renewable Free Limit** field, enter the minimum number of connections that leases need to be renewed.

The default value is 3.

Enter a value between 3 and 5.

i. In the **Maximum Lease Durations** field, enter the maximum time a database connection can be leased before it is revoked.

The default for Regular is 2m, with a range of 5s and 4h.

The default for Long Running is 30m, with a range of 5s and 6h.

> **Note**: During the summarization process, queries may take a long time to run if the project has a high number of WBS nodes. If you receive timeout errors, set your Long Running maximum lease duration to at least 30 minutes.

The default for Transactional is 30m, with a range of 5s and 6h.

Configuring Oracle WebCenter Content Core Capabilities (WCCC) in the Database Instance Settings

To set your WCCC settings:

> **Note**: Ensure the settings you entered in when you configured the content repository match the settings you enter below.

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **Content Repository**.
6) In the **Type** field, select **OracleWCCC**.
7) In the **Maximum document size** field, enter the maximum size in KB for documents that can be uploaded to P6. The default is 10240 KB. Enter a value between 0 and 1048576.

8) In the **Connection Maintenance Interval** field enter the frequency at which the connection to the content repository is validated. The default is 10 minutes. Enter a value between 1 second and 24 days.
9) In the **Host** field, enter the machine name or IP address of the content repository server.
10) In the **Port** field, enter the IntradocServerPort number of the content repository server. By default, this is 4444.
    a. Go to *WCCC_Home*`\ucm\cs\config\`.
    b. Edit the **config.cfg** file.
    c. Find the IntradocServerPort line, which contains the port number.
11) In the **Oracle Home** field, enter the location of the framework folder.

    For the framework folder, use the following format:

    /<FolderName>

    For example:

    /P6EPPM
12) In the **Oracle Security Group** field, enter the name of the Security Group assigned to the document folder created in WebCenter for P6 EPPM documents, as specified when you configured the content repository.

    For Example:

    Enter Oracle Security Group as Public.
13) In the **Oracle Security Account** field, enter the name of the Security Account for P6 EPPM documents, as specified when you configured the content repository.

    If you did not enable security accounts, leave this setting blank.
14) In the **Oracle Document Type** field, enter the document type for P6 EPPM documents, which can be either an existing document type or a new one, as specified when you configured the content repository.

    For example:

    Enter the Document Type as Document.
15) In the **Metadata Prefix** field, enter the prefix added to P6 EPPM metadata fields, as specified when you configured the content repository. For example, Prm.
16) In the **Admin User** field, enter the user name with administrative privileges, as specified when you configured the content repository. This setting is required.
17) From the **Authentication Mode** drop-down menu, select the authentication mode used to access the content repository server. P6 EPPM users cannot access content repository functions if you do not configure this setting.

    If you choose "Multiple User", all P6 EPPM content repository-related user names must match the equivalent content repository user name. For example, a P6 EPPM user named "Joe" must have an equivalent user named "Joe" in the content repository.

    If you choose "Single User", the administrative user specified in the setting above must have access to all appropriate SharePoint libraries to browse to documents outside of the P6 EPPM home folder.
18) Restart the P6 Server.

Configuring the Oracle Database Content Repository

You can use Oracle database as a content repository with your P6 EPPM installation.

To configure the Oracle database as your content repository:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database/Instance[n]/Content Repository**.

> **Note**: Changes to these settings require you to restart the P6 server.

4) In the **Type** field, select **Oracle Database**.

   This option will save documents and associated information in the P6 database schema. This option is only applicable if you are using an Oracle database on-premises or an Oracle Autonomous Database.
5) In the **Maximum document size** field, enter the maximum size in KB for documents that can be uploaded to P6. The default is 10240 KB. Enter a value between 0 and 1048576.
6) In the **Invalid Document Types** field, enter the file extensions of documents that are not permitted in P6. A list of file extensions can be separated with either commas or spaces.

   For example:

   exe,bin,sh

   .exe .bin .sh
7) In the **Connection Maintenance Interval** field enter the frequency at which the connection to the content repository is validated. The default is 10 minutes. Enter a value between 1 second and 24 days.

> **Note**: Ensure that the **Enable Cloud Storage** field is set to **false**.

8) Restart the P6 server.

Configuring CMIS-Compliant Content Repository in the Database Instance Settings

You can use Microsoft SharePoint with P6 by integrating SharePoint with your CMIS-compliant content repository and then configuring your CMIS-compliant content repository with P6.

To configure your CMIS-compliant content repository:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database.**
4) Select your **Instance** from the drop-down list.
5) Expand **Content Repository**.
6) In the **Type** field, select **CMIS**.

> **Note**: Changes to these settings require you to restart the P6 server.

7) In the **Maximum document size** field, enter the maximum size in KB for documents that can be uploaded to P6. The default is 10240 KB. Enter a value between 0 and 1048576.

8) In the **Invalid Document Types** field, enter the file extensions of documents that are not permitted in P6. A list of file extensions can be separated with either commas or spaces.

   For example:

   exe,bin,sh

   .exe .bin .sh

9) In the **Login Name** field, enter the user name for your content repository.
10) In the **Password** field, enter the password for the user name you entered above.
11) In the **Authentication Mode** field, enter authentication mode used to access the content repository server. P6 EPPM users cannot access content repository functions if you do not configure this setting.

    If you choose "Multiple User", all P6 EPPM content repository-related user names must match the equivalent content repository user name. For example, a P6 EPPM user named "Joe" must have an equivalent user named "Joe" in the content repository.

    If you choose "Single User", the administrative user specified in the setting above must have access to all appropriate Security Groups to browse to documents outside of the P6 EPPM home folder.

12) In the **Repository Name** field, enter the name for your content repository.

> **Note**: For SharePoint, enter the document library name you created for P6.

13) In the **Document Home** field, enter the location of the folder in the document library where you want to store P6 documents.
14) In the **Web Service URL** field, enter the URL for your web services home.
15) This is Web Service Endpoint with format http://<sharepoint host>/sites/<site name>/_vti_bin/cmissoapwsdl.aspx
16) Restart the P6 server.

Configuring Session Settings in the Database Instance Settings

The session settings allow you to issue database statements to customize the database environment when the connections are created. You need to set these settings only if you have a customization you need to apply to a database environment.

To set your session settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **Session Settings**.
6) In the **Setting [n]** field, enter the commands used to establish cursor sharing, rule-based mode, SQL trace, and more when database connections are created. Invalid settings in these fields are ignored. You can create five session settings.

   Oracle or Oracle Autonomous Database Example:

   alter session set _ = _

Microsoft SQL Server Example:
SET TRANSACTION ISOLATION LEVEL READ UNCOMMITTED

> **Note**: Changes to this setting require you to restart the P6 server.

Configuring Cost Based Optimization Settings in the Database Instance Settings

The cost based optimization settings will enable you to manipulate base SQL queries based on optimization statistics.

> **Caution:** Do not alter these settings unless you are familiar with cost based optimization. Contact My Oracle Support for more information.

To set your cost based optimization settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database/Instance[n]/Cost Based Optimization settings**.

> **Note**: Changes to these settings require you to restart the P6 server.

   a. Select **Enable**, to enable Cost Based Optimization. Leave the field clear to disable it.
   b. Select **Dump Matching SQL**, select to dump the SQL where a match is found in the QUERYLIB table for a given SQL statement.

      Leaving the field clear to dump the SQL where a match is not found in the QUERYLIB table for a given SQL statement.

> **Note**: To see these entries, you must set your logging level to INFO in ***Configuring Log Settings*** (on page 29).

Configuring Oracle Analytics Server in the Primavera P6 Administrator

You must configure Oracle Analytics Server settings for Oracle Analytics Server to work with P6.

To configure your Oracle Analytics Server settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Database.**
4) Select your **Instance** from the drop-down list.
5) Expand **BI Publisher**.

> **Note**: Changes to these settings require you to restart the P6 server.

6) Select **Personal Folders**, to enable personal folders per user. If you do not want to use personal folders, leave the option clear. Users have their own personal folders where they can store their objects. Only the user who created and saved the content in the folder can access the folder.

7) In the **Server URL** field, enter the URL used to connect to the Oracle Analytics Publisher web service to P6.

   For example,
   `http://serverIP:port/xmlpserver/services/PublicReportService?wsdl`

8) In the **Folder Paths** field, enter the relative path to the Oracle Analytics Server P6 reports folder where P6 will search for reports.

   Example format (the forward slash is required):

   /P6REPORTS

9) In the **Version** field, enter the version of Oracle Analytics Publisher that you want to integrate with P6.
10) In the **Admin Username** field, enter an Oracle Analytics Publisher web services user name with administrative privileges (for example, PxRptUser).
11) In the **Password** field, enter the password for the administrative user name.
12) In the **Sender Email ID** field, enter the email address that you want users to see if they choose to receive reports by email.

Configuring P6 to Connect to Oracle BPM

To connect P6 and BPM:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** tab, expand your configuration.
3) Expand **Database**.
4) Select your **Instance** from the drop-down list.
5) Expand **BPM Settings**.

> **Note**: Changes to these settings require you to restart the P6 server.

6) In the **Connector File Location** field, enter the full path (including the file name) where you copied the connector files.

   For example:

   `c:\oracle\bpm1111x\eppmjars\prm-bpm-connector-12c-v1.0.jar` or
   `/home/oracle/bpm1111x/rm-bpm-connector-12c-v1.0.jar`

7) In the **BPM library path** field, enter the path of the directory where you copied all the 12c jars.

> **Note:** If the above settings are incorrect or the BPM jar files are incomplete, you will be prompted with an error message when you try to configure the BPM. Verify that your settings and jar files are correct.

8) Select **Configure BPM** to set options from the dialog box. If you receive an error message, check your values from the previous steps in this section.
9) To configure P6 to use BPM, add the following settings:

> **Caution:** Do not put a forward slash / at the end of the URL. For

example, it should read only `http://host:port`, and not `http://host:port/`.

a. In the **User** field, enter the BPM user with administrative access to BPM.
b. In the **Password** field, enter the password for the user.
c. In the **T3 URL** field, enter the T3 URL for your Oracle SOA configuration. For example: `t3://<host_name>:<port>/soa-infra`.
d. In the **Security Realm** field, enter the name of the security realm used by BPM. This is jazn.com by default.
e. In the **Soap URL** field, enter the URL for the SOAP services. Usually this URL takes the form of `http://<host_name>:<port>`.
f. In the **Workspace URL** field, enter an address in the form of `http://<host_name>:<port>` that indicates where the BPM Workspace application is hosted.

Note: The host can be an IP address or a host name such as a machine name.

g. In the **Partition** field, enter the name of the SOA partition containing the BPM composite applications you would like to use in P6. The default partition name is `default`.

10) Click **Save**. When the configuration is complete, you will see a **BPM properties have been configured** message.
11) Restart the P6 application server.

Configuring Import/Export Options (Scheduled Service)

To set your import/export options (Scheduled Service) settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations Database**.
3) Select your **Instance** from the drop-down list.
4) Expand **Import/Export Options (Scheduled Services)**.
5) In the **File Location** field, enter the path you want the system to use for scheduled import and export jobs. All imports and exports, as well as all subfolders created or selected during scheduled jobs, are stored in the location specified in the File Location (Scheduled Service) field.

Note: There are separate **File Location (Scheduled Services)** fields for each of your available P6 EPPM database instances. Each field can be modified or set in **Database/Instance/Import/Export Options (Scheduled Services).**

Configuring Thread Pool Settings

The Thread Pool performs background job work. These settings control how many thread pools are available and how long any job can use them. Oracle recommends you keep the defaults because they will provide optimal service for most environments. Change the defaults only if you are configuring a large amount of services (scheduler, leveler, apply actuals, etc.).

To set your thread pool settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Thread Pool**.

> **Note**: Changes to these settings require you to restart the P6 server.

a. In the **Number of Threads** field, enter the number of server threads.

   The default value is 50.

b. In the **Maximum Task Duration** field, enter the maximum amount of time a task can use a thread from the P6 thread pool. Only the P6 activity view uses the P6 thread pool.

   The default value is 5m.

   Since database transactions can run inside the P6 thread pool, Oracle recommends setting the duration to be longer than the Regular Connection Pool's **Maximum Lease Duration** setting.

   Notes:

   - A thread from the P6 thread pool can only be interrupted when it is in a wait condition (such as waiting for a database request to complete).
   - See ***Configuring Connection Pool for Database Instance Settings*** (on page 18) for related settings.

c. In the **Maximum Long Running Task Duration** field, enter the maximum amount of time a long running task can run before being interrupted and canceled. This setting is used for Job Services (scheduler, summarizer, and leveler), which use the P6 Long Running Thread Pool.

   The default value is 20m.

   Oracle recommends you set the **Maximum Long Running Task Duration** for the thread pool to a value longer than the Long Running Connection Pool's **Maximum Lease Duration**.

d. In the **Maintenance Frequency** field, enter the frequency at which threads are checked for excess time durations.

   The default value is 45s.

Configuring AutoVue without VueLink

Configuring AutoVue without VueLink is the native AutoVue implementation. To use this implementation, you will configure a single AutoVue server that is common across all database instances.

Notes:

- When you configure AutoVue without VueLink, you are creating global AutoVue settings. These settings override any individual settings you may have created to configure AutoVue with VueLink.
- When upgrading to Version 22 from 15 R2 or earlier, AutoVue connection details are lost and must be entered again.

To configure AutoVue without VueLink, complete the following steps:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Document Viewing**.

Note: Changes to these settings require you to restart the P6 server.

4) Select **Enable.** The default value is unselected.

Notes:

- SSL mode does not work when the Enable option is set to false.
- By default, the ESAPI resources that come with VueLink is used. You can change the location of the resource files by using `-Dorg.owasp.espai.resources JAVA_OPTIONS` in the WebLogic application server or in the *setDomainEnv* script.
- By default, `dmsstamp.ini` and the oracle sample stamp from VueLink is used to create markup. You can change the location of the `dmsstamp.ini` file, which contains the stampfile location, using `-Dexternal.csi.intellistamp.def.location JAVA_OPTIONS` in the WebLogic application server or in the `setDomainEnv` script.
- If using Oracle Access Manager with your P6 EPPM deployment, add following context roots to the Oracle Access Manager exclusion list:
  `/p6/VueServlet/**`
  `/p6/jvueDMS/**`
  `/p6/P6AutoVueJNLPLauncher/**`
  `/p6/av_cert.pem`
  For more information about protecting your resources using Oracle Access Manager's exclusion list, see the "Protecting Your Resources" chapter in the *Oracle Access Manager Configuration Guide*.

5) In the **Host Name** field, enter the hostname for the server where AutoVue is installed.

> **Note**: Do not put a / at the end of the URL.

6) In the **Host Port** field, enter the port for the server where AutoVue is installed. The default port is **5099**.
7) Restart the P6 server.

Configuring Outside In

Outside In converts documents uploaded to your content repository into a raster-image file.

To configure Outside In:

1) In the Primavera P6 Administrator, do the following:
   a. Select your configuration.
   b. In the sidebar, select **Document Viewing**.
   c. In the **Fonts Directory** field, enter the full path to your operating system-specific fonts folder. For example, C:\Windows\Fonts.

   > **Note**: You cannot convert documents in languages that do not have a compatible font installed in the **Fonts Directory**. Before you convert these documents you must install the appropriate language font.

   d. In the **Images Directory** field, enter the full path to your Outside In images folder. For example, P6EPPM_HOME\P6\outsidein\ImageExport\Images.
2) Navigate to P6EPPM_HOME\P6.
3) Run `outsideInConfig.cmd` or `outsideInConfig.sh` (based on your operating system).

Configuring Log Settings

You can use the log settings to set how the system logs errors and warnings.

To set your log settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Log**.
4) Select Asynchronous to log messages after the previous one has been logged for better performance. The default is unselected.
5) To configure Console Logger settings:
   a. Select **Enabled**, to enable the console logger. The default is unselected.
   b. In the **Severity Level** drop-down menu, select one of the following severity levels for the Console Logger:
      - **debug**
      - **info**
      - **warn**

- **error**

Notes:

- The default severity level is info.
- The ranges are inclusive. For example, select "debug" to log all messages; select "warning" to log both warning and error level messages.

6) To configure File Logger settings:
   a. Select **Enabled**, to enable the file logger. The default is selected.
   b. Select **HTML**, to log as HTML, or leave the option clear to log as plain text.
   c. Note: Log files are created in a folder named WebAccessLogs, located in *webaccesshome*\WebAccessLogs
   d. In the **Archive Size** field, enter the minimum size (in Kb) a log file must be before it is archived.

      The default value is 1024.

      Enter a value between 1024 and 15360.
   e. In the **Severity Level** drop-down menu, select one of the following severity levels for the File Logger:
      - **debug**
      - **info**
      - **warn**
      - **error**

      Notes:

      - The default severity level is error.
      - The ranges are inclusive. For example, select "debug" to log all messages; select "warning" to log both warning and error level messages.
   f. In the **Number of Archive Files** field, enter the maximum number of log files to use.

      Enter a value between 2 and 2073600000. The default value is 6.

      Note: The default files are named WebAccessLog0.html through WebAccessLog5.html.

7) To configure Email Logger settings:

   Note: The email logger only sends information about Error messages.

   a. Select **Enabled**, to enable the Email Logger. The default is unselected.
   b. In the **SMTP Host** field, enter SMTP server that will send the email message.
   c. In the **From Email Address** field, enter the email address that you want to send log messages.

d. In the **To Email Address** field, enter the email address where you would like log messages sent.
e. In the **Email Subject** field, enter the subject line for error emails. The default value is P6 Web Access error.

Configuring Client Properties Settings

You can use the log settings to set how the system logs errors and warnings.

To set your log settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Log**.
4) Select Asynchronous to log messages after the previous one has been logged for better performance. The default is unselected.
5) To configure Console Logger settings:
   a. Select **Enabled**, to enable the console logger. The default is unselected.
   b. In the **Severity Level** drop-down menu, select one of the following severity levels for the Console Logger:
      - **debug**
      - **info**
      - **warn**
      - **error**

      Notes:
      - The default severity level is info.
      - The ranges are inclusive. For example, select "debug" to log all messages; select "warning" to log both warning and error level messages.
6) To configure File Logger settings:
   a. Select **Enabled**, to enable the file logger. The default is selected.
   b. Select **HTML**, to log as HTML, or leave the option clear to log as plain text.
   c. Note: Log files are created in a folder named WebAccessLogs, located in *webaccesshome*\WebAccessLogs
   d. In the **Archive Size** field, enter the minimum size (in Kb) a log file must be before it is archived.

      The default value is 1024.

      Enter a value between 1024 and 15360.
   e. In the **Severity Level** drop-down menu, select one of the following severity levels for the File Logger:
      - **debug**
      - **info**

- **warn**
- **error**

Notes:

- The default severity level is error.
- The ranges are inclusive. For example, select "debug" to log all messages; select "warning" to log both warning and error level messages.

f. In the **Number of Archive Files** field, enter the maximum number of log files to use. Enter a value between 2 and 2073600000. The default value is 6.

Note: The default files are named WebAccessLog0.html through WebAccessLog5.html.

7) To configure Email Logger settings:

Note: The email logger only sends information about Error messages.

a. Select **Enabled**, to enable the Email Logger. The default is unselected.
b. In the **SMTP Host** field, enter SMTP server that will send the email message.
c. In the **From Email Address** field, enter the email address that you want to send log messages.
d. In the **To Email Address** field, enter the email address where you would like log messages sent.
e. In the **Email Subject** field, enter the subject line for error emails. The default value is P6 Web Access error.

Configuring Web Proxy Settings

When internal services in P6 EPPM need to access external web sites, they may need to go through your organization's firewall. You can configure that capability in the Web Proxy settings. P6 uses web proxy settings when it displays Contract Manager portlets that integrate with a Fusion server and when it connects to a Geo Code Provider server.

To set your web proxy settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Client Properties**.

HTTP Server And Port Override: The HTTP front-end web server and port that P6 clients should use. Use URL format: http[s]://servername[:port], do not include context root. This setting is only necessary if problems are encountered while using a front-end web server proxy.

About Application Settings in the Primavera P6 Administrator

Once you have installed P6, you will need to set your Primavera P6 Administrator settings to create multiple databases and get items such as your help and tutorials working with P6. These settings also focus on items within P6 such as custom portlets.

Manage Access to Multiple Database Instances

P6 enables you to access data from different P6 EPPM databases. When you configure P6 to support multiple database instances, the Login page displays a Database list that enables users to choose the database instance where they want to connect.

Through the Primavera P6 Administrator, you can configure the server for P6 to manage user access to specific databases by requiring a database parameter in the URL. The database parameter, which is the name of a database instance, connects to the P6 server URL and points to that specific database instance. When users access the URL you specify, the Database list does not display in the Login page and they have login access only to the database instance defined by the database parameter. If users attempt to access the login page URL without specifying the required database parameter, a message displays to indicate that the URL is invalid and directs them to the administrator of P6.

For example, the following URL would log a user in to the database instance named Sample:

`http://`*`serverIP`*`:`*`listenport`*`/login?db=Sample`

As the administrator, you can specify a keyword that bypasses the database parameter requirement, so that you can access all databases through the Login page database list.

Follow instructions for the database dropdown key in ***Configuring Application Settings in the Primavera P6 Administrator*** (on page 33) to require a database parameter for the URL and to set a keyword to bypass the database parameter requirement.

Configuring Application Settings in the Primavera P6 Administrator

To set your application settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Application/General**.
4) Do the following to configure your general application settings:
   a. Select **Ignore Daylight Savings Time** to recognize daylight savings time or leave the field clear to ignore it.

Notes:

- This setting will also impact P6 Team Member. If you notice dates and tasks are off by an hour in your P6 Team Member interfaces, the time difference could be caused by this setting.
- Changes to this setting require you to restart the P6 server.

b. Select **Allow Auto-Summarize Option** to allow automatic summarization to be available in Resource Staffing user preferences.

c. Select **Use HTTP POST for Custom Portlets** to use HTTP POST requests instead of GET requests when loading custom portlets.

d. Select **Enable Cross Site Scripting Filter** to allow P6 EPPM to check for unsafe http requests from the browser and unsafe responses from P6, including requested documents. P6 EPPM considers requests and responses that contain JavaScript that P6 did not generate unsafe.

   The browser will display an error message for all unsafe page requests. Internet Explorer 7 will show an error message if users attempt to download an unsafe document. Internet Explorer 8 and Firefox will prompt users to download the document file instead of viewing the document directly in the P6 browser.

e. Select **Enable Cross Site Request Forgery Checking (CSRF)** to allow CSRF for your environment.

f. Select **Enable Session Hijack Checking** to allow hijack checking.

g. In the **Maximum Transactions for Excel Import of Resources** field, enter the maximum number of transactions (activities or resources) that can be imported at once from an .xls or .csv file.

   The default value is 2000.

   Enter a value between 100 and 2000.

h. In the **Database Dropdown Key** field, enter the keyword to use for enabling database selection control in the login page. Pass this as a URL parameter db=keyword. See ***Manage Access to Multiple Database Instances*** (on page 33) for more information.

   Set this to an empty string if you do not want to require the keyword.

   You can also use the value you specify as the keyword to bypass the database requirement when logging in to the server for P6. For example, `https://`*`serverIP`*`:`*`listenport`*`/login?db=bypass`

i. In the **Logout URL** field, enter a specific URL that appears when the user exits with the Logout/Close icon in the banner of P6. You can use any valid URL.

   If you are using WebSSO, Oracle recommends you set the Logout URL to your SSO server's logout page to end the current SSO session.

   If you do not specify a URL, P6 directs the user to the launch page of P6.

> **Note**: If you selected the "Don't show this again" option when you used the SSO login screen, that screen will not reappear after you logout then try to log back in. To get it to reappear, you need to clear the cookies for P6.

j. In the **Hide Empty Project or WBS Threshold** field, enter the maximum number of projects which the user can open before empty projects and WBS nodes will be hidden in the Activities view.

k. In the **Custom Portlet URL Encryption Key** field, enter Encryption key for custom portlet user password.

In the Dashboards page of P6, users can create custom portlets. Depending on the target, P6 can pass the password of the currently logged on user to the target application. By default, the password is not encrypted. Use this setting to encrypt the password.

> **Notes**:
>
> - Assigning a key encrypts the password that is part of the URL for a custom portlet.
> - The value can be any alphanumeric character or string of characters.
> - This encryption uses the Sun/Blowfish algorithm.
> - Changes to this setting require you to restart the P6 server.
> - See the *P6 Help* for more information on custom portlets.

l. In the **Transaction Monitor Execution Interval** field, enter how often the transaction monitor job will run. This will ensure there are no orphan transactions.

The default value is 10m.

Enter a value between 1s and 24d20h31m23s647.

> **Note**: Changes to this setting require you to restart the P6 server.

m. In the **P6 Help Server URL** field, enter the URL used to launch P6 Help.

The default URL points to the version of the help hosted by Oracle. In contains the most up-to-date documentation.

> **Note**: If you prefer to use the local version of the P6 Help, you can use the local host URL. You can use the local help only if you installed and deployed the p6help.war file in WebLogic.
>
> **Example format:**
>
> `http://<server_name>:<listen_port>/<context_root>`
>
> The URL might be case-sensitive, depending on your application server configuration.

n. In the **TM Help Server URL** field, enter the URL used to launch P6 Team Member Help.

The default URL points to the version hosted by Oracle. It contains the most up-to-date documentation.

> **Note**: If you prefer to use the local version of the P6 Team Member Help, you can use the local host URL. You can use the local help only if you installed and deployed the p6tmhelp.war file in WebLogic.
>
> The URL might be case-sensitive, depending on your application server configuration.

o. System Administration Help Server URL - enter the URL for system administration help.

Example format:

`http://<server_name>:<listen_port>/<context_root>`

Configuring User Productivity Kit Settings in Application Settings

To set your User Productivity Kit (UPK) settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Application/User Productivity Kit**.
   a. Select **Enable User Productivity Kit** to allow tutorials to be available within P6 EPPM.

> **Note**: See the documentation included with Oracle UPK (User Productivity Kit) for details on In-Application Support.

   b. In the **User Productivity Kit URL** field, enter the URL used to launch UPK content.

> **Notes**:
>
> - The URL might be case-sensitive, depending on your application server configuration.
> - WebLogic requires that the name of the UPK file stay the same when a custom UPK file is deployed. If you change the file name, you must create a new domain in WebLogic to match the name of the new UPK file.
> - A UPK URL entered here is used for both P6 and P6 Team Member Web. A separate P6 EPPM configuration must be made to use different content in these products.

About the Primavera P6 Administrator Services Settings

Once you have installed P6, you will need to set your Primavera P6 Administrator services settings to set items such as scheduler, leveler, and apply actuals. These services settings manage your long running services including when to run them and how many threads to use.

Oracle recommends having at least two configurations: one for application servers hosting P6 and another for the background service applications that run services, but do not process web pages. You can create more configurations as needed.

For the P6 application server, you need to limit background services and how often they run. This will allow users' requests to process more quickly.

For the background services configuration, you can have more threads configured and run them at shorter intervals. For information on setting up a separate server for job services, see ***Configuring a Job Services Server Using p6services.jar*** (on page 86).

If you are running background services and P6 on the same server, Oracle recommends keeping the settings' defaults for your configuration.

Configuration for ASAP and Scheduled Services

The availability of ASAP and Scheduled Services depends on which Primavera P6 Administrator settings you populate and whether you are using P6 or P6 Professional. The summary below will help you to determine when you need to configure the Primavera P6 Administrator for job services.

ASAP Jobs

For P6, you must populate the appropriate Primavera P6 Administrator settings for all ASAP jobs that you want to run.

For P6 Professional, you must populate the Summarizer and Apply Actuals Primavera P6 Administrator settings for those features to run. The Scheduler, Leveler, Store Period Performance, and Recalculate Assignment Costs features will run locally in P6 Professional.

Scheduled Services Jobs

For P6, you must populate the appropriate Primavera P6 Administrator settings for all scheduled services jobs that you want to run. All scheduled services jobs are run from and are displayed in P6.

P6 Professional cannot run any scheduled services jobs or display the status of P6 scheduled services jobs.

> **Note:** Scheduled Services cannot run for Project Templates; however, Scheduler, Leveler, and Recalculate Assignment Costs features can be run as ASAP jobs for templates in P6.

Configuring Services Settings

To set your services settings:

> **Note**: If you are running services and P6 on the same server, you should keep the defaults for the rates settings. If you want to apply the service immediately, set the rates low. Remember that if the server is actively applying the service, all users will experience delays in the application.

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/General**.

a. Select **Enable All Services** to enable all services without having to set concurrent threads on each service. If selected, the application will use the concurrent threads for all services. Oracle recommends enabling all services if you are using the Summarize or Apply Actuals features in P6 Professional.

   Ensure the field is clear if you want the application to treat the concurrent threads of services as equal to zero. When you set to false, the values for the threads will stay the same.

b. Select **Enable Job Cleanup on Startup** to restart recurring jobs that are stuck in the running state.

   Enable Job Cleanup on Startup will start when the application initially launches and will check for any recurring jobs that are running. It will set the status of all running jobs to pending for all databases that have **Database/Instance/Auto Start Services** enabled. It also follows the **Services/Enable All Services** setting and will not run if **Enable All Services** is set to false.

   Enable Job Cleanup on Startup can run on a full build or the separate job services application. If you are on a clustered environment, run this service in only one instance.

c. In the **Job Service Poll Rate** field, enter the rate at which the server polls the database for new jobs to run.

   The default value is 10s.

   Enter a value between 1s and 24d20h31m23s647.

d. In the **ASAP Cleanup Rate** field, enter the rate that the database removes completed WebASAP jobs from the database.

   The default value is 1d.

   Enter a value between 1d and 24d.

   Once the time is met all ASAP jobs that have a status other than running or delegated will be removed from the table automatically. Running and delegated jobs will be removed if they are older than the cleanup rate or if they are older than one day, whichever is greater.

   Note: Confirm that the cleanup rate is greater than your longest running job.

e. In the **Job Service Shared Folder Location** field, enter the location to store temporary files while they are in the job queue.

Tip

See ***Configuring a Job Services Server Using p6services.jar*** (on page 86) for more information on these settings.

Configuring Publication Settings in Services Settings

Modify publication settings to specify constraints on your report publishing jobs.

To configure your publication settings:

Note: The default settings should be the optimal settings for most

environments. Change them only if your environment requires different settings.

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Publication/Settings**.
4) To configure **General Data:**
   a. In the **Page Size** field, enter the maximum number of rows of general data a job can process. This applies to each business object that falls under the general category; general data is not time-distributed (spread), not hierarchical, and not in a blob. When using this setting, each business object processes separately.

      The default value is 32.

      Enter a value between 1 and 8192.
   b. In the **Max Job Count** field, enter the number of processes used for this service on your server.

      The default value is 1.

      Enter a value between 1 and 20.
5) To configure **TimeDistributed**:
   a. In the **Page Size** field, enter the maximum number of rows of time-distributed (spread) data that a job can process. This applies to each business object that falls under the time-distributed category. When using this setting, each business object processes separately.

      The default value is 16.

      Enter a value between 1 and 8192.
   b. In the **Max Job Count** field, enter the number of processes used for this service on your server.

      The default value is 1.

      Enter a value between 1 and 20.
6) To configure **Blob Data**:
   a. In the **Page Size** field, enter the maximum number of rows of blob data that a job can process. This applies to each business object that falls under the blob category. When using this setting, each business object processes separately.

      The default value is 25.

      Enter a value between 1 and 8192.
   b. In the **Max Job Count** field, enter the number of processes used for this service on your server.

      The default value is 1.

      Enter a value between 1 and 20.
7) To configure **Log**:
   a. In the **Security Level** drop-down menu, select the level of information contained in the log file for all publication services. The ranges are inclusive. For example, select **debug** to log all messages; select **info** to log details about what runs, exceptions, and warnings; select **warning** to log both warning and error level messages.

The default value is info.

Select **info**, **debug**, **warning**, or **error**.

b. In the **Global Service Log File Cap (Success)** field, enter the number of logs to retain for successful global publication services. This will retain a log for each global service. If set to 5, the last 5 successful service runs will be retained for each global service.

The default value is 5.

Enter a value between 1 and 25.

c. In the **Global Service Log File Cap (Fail)** field, enter the number of logs to retain for failed global publication services. This will retain a log for each global service. If set to 5, the last 5 failed service runs will be retained for each global service.

The default value is 5.

Enter a value between 1 and 25.

d. In the **Project Service Log File Cap (Success)** field, enter the number of logs to retain for successful Publish Project jobs. This will retain a log for each project service. If set to 5, the last 5 successful service runs will be retained.

The default value is 5.

Enter a value between 1 and 25.

e. In the **Project Service Log File Cap (Fail)** field, enter the number of logs to retain for failed Publish Project jobs. This will retain a log for each project service. If set to 5, the last 5 failed service runs will be retained, per project.

The default value is 5.

Enter a value between 1 and 25.

Configuring Publication Services in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have scheduling work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high. Remember that if the server is actively applying the service, all users will experience delays in the application.

To configure your publication settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Publication/Services**.
4) You can use Project Arbiter to automate submitting Publish Project services for eligible projects to the service queue. To configure **Project Arbiter**:
   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the **Interval**.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not run on this server.

The default value is 1.

Enter either 0 or 1.

5) To configure **Publish Project:**
   a. Select **Active Mode** field if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the **Interval**.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not be run on this server.

      The default value is 2.

      Enter a value between 0 and 20.
6) To configure **Publish Enterprise Data**:

> **Note**: Publish Enterprise Data, Enterprise Summaries, Resource Management, and Security will recalculate data and store it in physical fields in the Extended Schema tables, and will perform other data denormalization tasks. For example, duration fields are calculated fields in the existing P6 schema tables, but will be recalculated and stored as physical fields in the extended schema tables when a project is published.

   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the **Interval**.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not run on this server.

      The default value is 1.

      Enter either 0 or 1.
7) To configure **Publish Enterprise Summaries**:
   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the Interval.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not be run on this server.

      The default value is 1.

Enter either 0 or 1.

8) To configure **Publish Resource Management**:
   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the **Interval**.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not be run on this server.

      The default value is 1.

      Enter either 0 or 1.
9) To configure **Publish Security**:
   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the **Interval**.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not run on this server.

      The default value is 1.

      Enter either 0 or 1.
10) To configure **Publish Resource Role Assignment**:
   a. Select **Active Mode** if you want jobs processed continuously until all jobs finish. Leave this field clear if you want each job processed according to the Interval.
   b. In the **Interval** field, enter the amount of time the service will wait before running the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that this service will not run on this server.

      The default value is 1.

      Enter either 0 or 1.

Configuring Delete Published Data in Services Settings

If you are running services and P6 on the same server, you should keep the defaults.

To set your delete published data settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Publication/Delete Published Data**.

a. In the **Interval** field, enter the amount of time the DeletePublishedData service will wait before scheduling the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds). When P6 initiates the DeletePublishedData service, it will attempt to run immediately but switch to running as a job service if it takes too long to start.

   The default value is 10s.

   Enter a value between 1s and 24d20h31m23s647.

b. In the **Concurrent Threads** field, enter the number of processes used for the DeletePublishedData service on this server. A value of 0 indicates that the service is not available on this server.

   The default value is 2.

   Enter a value between 0 and 20.

c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring Infrastructure Services in Services Settings

Configuring Module Access Service in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to apply the service immediately, you should set the rates low (for example, 30s). Remember that if the server is actively applying the service, all users will experience delays in the application.

To set your module access service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Infrastructure Services**.
   a. In the **Update Rate** field, enter the rate when a Business Rule Engine synchronizes with the database for license counts.

      The default value is 30s.

      Enter a value between 100 and 1m.

   b. In the **Expiration Check Rate** field, enter the rate when the database checks licenses to see if they should expire.

      The default value is 2m.

      Enter a value between 500 and 15m.

Configuring Timestamp Service in Services Settings

When the timestamp service runs, it searches the database for what items have changed and need to be refreshed in the cache.

To set your timestamp service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Timestamp Service**.

4) In the **Refresh Rate** field, enter the rate when the database is queried to determine if a table change notification is necessary.

   The default value is 1m.

   Enter a value between 15s and 1h.

> **Notes**:
>
> - If you are running services and P6 on the same server, you should keep the defaults. If you enter a longer rate, the server will run more efficiently, but the data may be out of date. If you enter a shorter time, the data will be up to date, but the server may not run as efficiently.
> - Changes to this setting require you to restart the P6 server.

Configuring Mail Service in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to apply the service immediately, you should set the Interval low. Remember that if the server is actively applying the service, all users will experience delays in the application.

To set your mail service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Infrastructure Services**.
4) In the Mail Service section:
   a. In the **Email Server** field, enter the hostname or IP address of the email notification server.
   b. In the **Security** drop-down menu, select one of the following based on the security you are using:
      - **SSL**
      - **TLS**
      - **None**
   c. In the **SMTP(S) Port** field, enter the TCP/IP port of the outgoing SMTP server. The default value is 465.
   d. In the **Bounce Email Address** field, enter the address where emails should be sent if delivery fails.

> **Note**: Bounced emails will be sent to the person who sent them automatically. This bounce field allows you to send bounced emails to your administrators so they can investigate potential problems with emails.

   e. In the **Sender's Email ID** field, enter the address to be used for all emails sent from P6.
   f. In the **Send Interval** field, enter how often to send queued mail messages.

      The default value is 1m.

      Enter a value between 0 and 24d20h31m23s647.

g. In the **Maximum Queue Length** field, enter the maximum size of the mail message queue.

   The default value is 250.

   Enter a value between 0 and 2147483647.

h. In the **Authorized User Name** field, enter the name of the account to use to send mail from this mail server.

i. In the **Authorized User password** field, enter the password of the account used to send mail from this mail server.

Configuring Registry Service in Services Settings

The registry service finds changes in the Primavera P6 Administrator configuration settings and deploys those changes in the server. If you are running services and P6 on the same server, you should keep the defaults. If you enter a longer rate, the server will run more efficiently, but the data may be out of date. If you enter a shorter time, the data will be up to date, but the server may not run as efficiently.

To set your registry service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Registry Service**.
   a. In the **Refresh Rate** field, enter the rate when the Business Rule Engine status updates in the database.

      The default value is 1m30s.

      Enter a value between 15s and 1h.

   b. In the **Stale Period** field, enter the duration of inactivity that indicates an inoperable Business Rule Engine.

      The default value is 4m.

      Enter a value between 1m and 10m.

   c. In the **Port** field, enter the TCP/IP port that will receive requests to revive dead Business Rule Engines.

      The default value is 9192.

      Enter a value between 1 and 65535.

Configuring Next Key Service in Services Settings

The next key service finds cached keys that need updating.

To set your next key service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Next Key Service**.
   a. In the **Refresh Rate** field, enter the rate to refresh the next key cache.

      The default value is 1m.

      Enter a value between 15s and 1h.

> **Note**: If you are running services and P6 on the same server, you should keep the defaults. If you enter a longer rate, the server will run more efficiently, but the data may be out of date. If you enter a shorter time, the data will be up to date, but the server may not run as efficiently.

b. In the **Maximum Cached Keys** field, enter the maximum next keys to cache per table.

The default value is 10.

Enter a value between 1 and 100.

Configuring Alert Notification Service in Services Settings

The alert notification service controls how often the P6 database checks for alerts.

To set your alert notification service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Alert Notification Service**.
4) In the **Refresh Rate** field, enter the rate to refresh alerts.

   The default value is 30s.

   Enter a value between 15s and 15m.

> **Note**: If you are running services and P6 on the same server, you should keep the defaults. If you enter a longer rate, the server will run more efficiently, but the data may be out of date. If you enter a shorter time, the data will be up to date, but the server may not run as efficiently.

Configuring Collaboration Synchronization Service in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to apply the service immediately, you should set the Interval low. Remember that if the server is actively applying the service, all users will experience delays in the application.

To set your collaboration synchronization service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Collaboration Synchronization Service**.
4) In the **Synchronization Interval** field, enter the interval when the collaboration synchronization service runs. The synchronization service deletes documents and workflows for deleted projects.

   The default value is 1h.

   Enter a value between 1m and 24d20h31m23s647.

Configuring Asynchronous Jobs in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to apply the service immediately, you should set the Interval low. Remember that if the server is actively applying the service, all users will experience delays in the application.

To set your asynchronous jobs service settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Asynchronous Jobs**.
   a. In the **Purge Interval** field, enter how often to remove long running job records from the database.

      The default value is 1h.

      Enter a value between 1m and 24d20h31m23s647.
   b. In the **Grace Time** field, enter the minimum age of long running job records removed during purge.

      The default value is 1d.

      Enter a value between 0 and 24d20h31m23s647.

Configuring Project Hierarchy Cache in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to apply the cache immediately, you should set the Frequency low. Remember that if the server is actively applying the cache, all users will experience delays in the application.

To set your project hierarchy cache settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Project Hierarchy Cache**.
   a. Select **Enable WBS Hierarchy Preload**.

      Oracle recommends keeping this setting selected for most situations since security checks rely on the WBS Hierarchy cache preload.

      Leave this field clear only if you are loading project details (for example, an API request) and the preloading cache with WBS Hierarchy details is taking a lot of time.
   b. In the **Cache Policy** drop-down menu, select the cache policy to use. The cache policy determines how much data is in the cache and which data to remove to reclaim memory.

      You can select one of the following:
      - **FIFO** First In First Out-projects are cleared from the cache in the same order they were added to memory.
      - **LRU** Least Recently Used projects are cleared from the cache before more recently used ones.
      - **JVMM** Java Virtual Machine Managed uses soft references to cache elements; memory used by soft references is reclaimed by the JVM as required.
      - **PRR** Projects are selected at random to be cleared from cache.
      - **PRFIFO** Periodic Refresh First In First Out is the same as FIFO, except policy is enforced based on MaintenanceFrequency.
      - **PRLRU** Periodic Refresh Least Recently Used is the same as LRU, except policy is enforced based on MaintenanceFrequency.
      - **PRCC** Periodic Refresh Clear Cache ignores CacheLimit to flush the entire cache, based on MaintenanceFrequency.

Note: The default value is PRR.

c. In the **Cache Limit** field, enter the maximum number of projects stored in memory.

   The default value is 5000.

   Enter a value between 1000 and 30000.

d. In the **Maintenance Frequency** field, enter the frequency for applying the specified cache policy. If you apply the cache policy, the system can reclaim memory from the cache.

   The default value is 5h.

   Enter a value between 1m and 24d.

Configuring Job Services in Services Settings

Configuring Scheduler in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have scheduling work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively scheduling work, all users will experience delays in the application.

To set your scheduler settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Scheduler**.
   a. In the **Interval** field, enter the amount of time the Web Scheduler will wait before scheduling the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes (active schedulers) used for scheduling on this server. A value of 0 indicates that scheduling will not perform on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs are scheduled. Select **false** if you want each job processed according to the Scheduling Interval.

   d. In the **Load All Calendars Till Threshold** field, select **true**. The default value is **true**.

Configuring Leveler in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have leveling work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively doing leveling work, all users will experience delays in the application.

To set your leveler settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Leveler**.
   a. In the **Interval** field, enter the amount of time the Web Leveler will wait before leveling the next available job (in 1d1h1m1s format, specifying only numbers without letters indicates milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes (active levelers) used for leveling on this server. A value of 0 indicates this server will not perform leveling.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs are leveled. Select **false** if you want each job processed according to the Leveling Interval.

Configuring Summarizer in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have summarizing work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively doing summarizing work, all users will experience delays in the application.

To set your summarizer settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Summarizer**.
   a. In the **Interval** field, enter the amount of time the Summarizer will wait before summarizing the next available job.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

d. In the **Maximum Duration to Summarize** field, enter the maximum activity duration that the summarizer will handle. Any projects that contain activities with durations longer than this setting will fail summarization and an error will be displayed for that project.

The default value is 100,000.

Configuring Apply Actuals in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have apply actuals work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively applying actuals, all users will experience delays in the application.

To set your apply actuals settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Apply Actuals**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Import/Export

Configuring Import/Export Service in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have store period performance work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively running store period performance work, all users will experience delays in the application.

To set your store period performance settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Import/Export**.
5) Under **Import/Export Service**:

a. In the **Interval** field, enter the amount of time the service will wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

   The default value is 10s.

   Enter a value between 1s and 24d20h31m23s647.

b. In the **Concurrent Threads** field, enter the number of processes used for the service on this server. A value of 0 indicates that the service is not available on this server.

   The default value is 2.

   Enter a value between 0 and 20.

c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring Import/Export Options in Services Settings

To set your import/export options settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Import/Export**.
5) Under **Import/Export Option**:

   a. In the **Store Files In Database** field, select true if you want imported files including images to be stored in the database. Select false if you do not want files to be stored in the database.

   b. In the **Temporary File Location(ASAP Service)** field, enter the location to store the temporary file during the XML import/export process or image storing process. If you do not specify a location, the temporary file is placed in the bootstrap home location, which is in the P6 home directory (for example, c:\p6home).

   c. In the **Maximum file size** field, enter the maximum file size (in KB) for XML import/export and image files. JVM settings and available space in the Temporary File Location determine the file size. Users might need to alter the memory settings in their application server if the import/export file size is greater than the maximum default file size.

      The default value is 102400.

      Enter a value between 1024 and 2147483647.

> **Note**: There are also settings to configure the maximum height and width of stored images in P6 on the Data Limits page of Application Settings.

Configuring Unifier in Services Settings

To set your Unifier integration settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Unifier**.

5) Expand **SendToScheduleSheet**.

   The SendToScheduleSheet service sends P6 data to Unifier's schedule sheet when the Send to Schedule Sheet action is used in P6.

   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

6) Expand **SummarizeByCBS**.

   The **SummarizeByCBS** service creates either CBS Summary data or Resource and Expenses Summary and Spread data depending on a project's Schedule Type when the Send to Summary Sheet action is used in P6.

   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

7) Expand **ProjectUpdateCheck**.

   If a project has been summarized and there hasn't been any changes made to the project since it was summarized, the ProjectUpdateCheck service will prevent the SummarizeByCBS service from running.

   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Overallocation Check in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want the server to check for overallocations immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively checking for overallocations, all users will experience delays in the application.

> **Note**: Enable the Project Arbiter service because projects will be published before running the overallocation service.

To set your overallocation check settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Overallocation Check**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 30s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Global Replace Service in Services Settings

To set your global replace settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Global Replace**.
   a. In the **Interval** field, enter the amount of time the service will wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for the service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring Sync Units

Configuring Sync Actual This Period in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to sync actuals immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively synchronizing actuals, all users will experience delays in the application.

To set your Sync Actual This Period settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Sync Units**.
5) Under **Sync Actual This Period**:
   a. In the **Enabled** field, select whether to synchronize actuals and ActualThisPeriod values. If you select true, the setting recalculates actual units and costs for ThisPeriod. Choose if you do not want to synchronize actuals and ActualThisPeriod values.
   b. In the **Execution Interval** field, enter the amount of time the service will wait before checking for any SyncActualThisPeriod jobs. The SyncActualThisPeriod service will poll the job service table, and the execution interval will determine when it starts.

      The default value is 5m.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **ActivityThreshold** field, determine if the SyncActualThisPeriod service will run simultaneously or as a job service.

      If the number of activities in a project is over the activity threshold, the SyncActualThisPeriod will run as a job service and add an entry to the job service table. The SyncActualThisPeriod service will poll the job service table, and the execution interval will determine when it starts. If the number of activities in a project is under the activity threshold, it will run immediately and will not add an entry to the job service table.

      The default value is 8000.

      Enter a value between 1 and 2147483647.
   d. In the **Concurrent Threads** field, enter the number of processes used for the SyncActualThisPeriod service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.

Configuring Sync Remaining to Planned in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to sync immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively synchronizing, all users will experience delays in the application.

To set your Sync Remaining To Planned settings:

1) Open the Primavera P6 Administrator.

2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Sync Units**.
5) Under **Sync Remaining to Planned**:
   a. In the **Enabled** field, select **false** to disable the SyncRemainingtoPlanned service. Select **true** to enable the SyncRemainingtoPlanned service.
   b. In the **Execution Interval** field, enter the amount of time the service will wait before checking for any SyncRemainingtoPlanned jobs. The SyncRemainingtoPlanned service will poll the job service table, and the execution interval will determine when it starts.

      The default value is 5m.

      Enter a value between 1s and 24d20h31m23s647.
   c. In the **ActivityThreshold** field, determine if the SyncRemainingtoPlanned service will run simultaneously or as a job service.

      If the number of activities in a project is over the activity threshold, the SyncRemainingtoPlanned will run as a job service and add an entry to the job service table. The SyncRemainingtoPlanned service will poll the job service table, and the execution interval will determine when it starts. If the number of activities in a project is under the activity threshold, it will run immediately and will not add an entry to the job service table.

      The default value is 8000.

      Enter a value between 1 and 30000.
   d. In the **Concurrent Threads** field, enter the number of processes used for the SyncRemainingtoPlanned service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.

Configuring Sync Actuals with Duration % Complete in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want to sync actuals immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively synchronizing actuals, all users will experience delays in the application.

To set your Sync Actuals With Duration % Complete settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Sync Units**.
5) Under **Sync Actuals with Duration % Complete**:
   a. In the **Enabled** field, select **false** to disable the SyncActualswithDuration%Complete service. Select **true** to enable the SyncActualswithDuration%Complete service.

b. In the **Execution Interval** field, enter the amount of time the service will wait before checking for any SyncActualswithDuration%Complete jobs. The SyncActualswithDuration%Complete service will poll the job service table, and the execution interval will determine when it starts.

   The default value is 5m.

   Enter a value between 1s and 24d20h31m23s647.

c. In the **ActivityThreshold** field, determine if the SyncActualswithDuration%Complete service will run simultaneously or as a job service.

   If the number of activities in a project is over the activity threshold, the SyncActualswithDuration%Complete will run as a job service and add an entry to the job service table. The SyncActualswithDuration%Complete service will poll the job service table, and the execution interval will determine when it starts. If the number of activities in a project is under the activity threshold, it will run immediately and will not add an entry to the job service table.

   The default value is 8000.

   Enter a value between 1 and 2147483647.

d. In the **Concurrent Threads** field, enter the number of processes used for the SyncActualswithDuration%Complete service on this server. A value of 0 indicates that the service is not available on this server.

   The default value is 2.

   Enter a value between 0 and 20.

Configuring CopyProject in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want the server to check CopyProject immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively checking for CopyProject, all users will experience delays in the application.

To configure the CopyProject settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **CopyProject**.

   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Baseline in Service Settings

As a project progresses, you might choose to update baseline data without restoring the baseline or creating a new baseline. When a project is in progress, creating a new baseline may not yield accurate comparison results. When you update a baseline, only the data types you select will be updated. You may also create and copy baselines efficiently.

To set your Baseline settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Services/Baseline**.
   a. In the Create/Copy baseline section:
      - In the **Active Mode** field, select **true** if you want jobs processed continuously until all baselines are created or copied. Select **false** if you want each baseline created or copied according to the interval.
      - In the **Interval** field, enter the amount of time the service will wait before creating or copying the baseline during the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

        The default value is 10s.

        Enter a value between 1s and 24d20h31m23s647.
      - In the **Concurrent Threads** field, enter the number of processes used to create or copy the baseline on this server. A value of 0 indicates this server will not create or copy baselines.

        The default value is 2.

        Enter a value between 0 and 20.

   b. In the Update Baseline section:
      - In the **Active Mode** field, select **true** if you want jobs processed continuously until all baselines are updated. Select **false** if you want each baseline updated according to the interval.
      - In the **Interval** field, enter the amount of time the service will wait before updating the baseline during the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

        The default value is 10s.

        Enter a value between 1s and 24d20h31m23s647.
      - In the **Concurrent Threads** field, enter the number of processes used for update the baseline on this server. A value of 0 indicates this server will not update baselines.

        The default value is 2.

        Enter a value between 0 and 20.

Configuring GatewaySynchronization

The GatewaySynchronization service sends information from P6 to Primavera Unifier or Oracle Primavera Cloud via Primavera Gateway.

To configure GatewaySynchronization:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **GatewaySynchronization**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.
   d. In the **Timeout for Gateway job completion** field, enter the maximum time P6 will wait for a gateway job to be completed before marking its status as failed or timed out.

      The default value is 12 minutes.

      Enter a value between 1 minute and 2 days.

Configuring Store Period Performance in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have store period performance work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively running store period performance work, all users will experience delays in the application.

To set your store period performance settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Store Period Performance**.
   a. In the **Interval** field, enter the amount of time the PeriodPerformance service will wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for the PeriodPerformance service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.

c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring Recalculate Assignment Cost in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have recalculate assignment cost work that needs to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively running recalculate assignment cost work, all users will experience delays in the application.

To set your recalculate assignment cost settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Recalculate Assignment Cost**.
   a. In the **Interval** field, enter the amount of time the RecalculateAssignmentCost service will wait before scheduling the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds). When P6 initiates the RecalculateAssignmentCosts service, it will attempt to run immediately but switch to running as a job service if it takes too long to start.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.
   b. In the **Concurrent Threads** field, enter the number of processes used for the RecalculateAssignmentCost service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring Rename Document Folder in Services Settings

If you are running services and P6 on the same server, you should keep the defaults.

To set your rename document folder settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Rename Document Folder**.
   a. In the **Interval** field, enter the amount of time the RenameDocumentFolder service will wait before scheduling the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds). When P6 initiates the RenameDocumentFolder service, it will attempt to run immediately but switch to running as a job service if it takes too long to start.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

b. In the **Concurrent Threads** field, enter the number of processes used for the RenameDocumentFolder service on this server. A value of 0 indicates that the service is not available on this server.

   The default value is 2.

   Enter a value between 0 and 20.

c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring CopyWBS in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want the server to copy WBS elements immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively copying WBS elements, all users will experience delays in the application.

To configure the CopyWBS settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **CopyWBS**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Export Excel in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you have exports to Excel that need to be done immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively exporting to Excel, all users will experience delays in the application.

To configure the Export Excel settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Export Excel**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

Enter a value between 1s and 24d.

b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

The default value is 2.

Enter a value between 0 and 20.

c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Import/Export Enterprise Data in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want the server to import or export enterprise data immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively importing or exporting enterprise data, all users will experience delays in the application.

To configure the Import/Export Enterprise Data settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Import/Export Enterprise Data**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

   The default value is 10s.

   Enter a value between 1s and 24d.

   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

   The default value is 2.

   Enter a value between 0 and 20.

   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

   d. In the Maximum Duration field, enter the maximum activity duration that the Import/Export Enterprise Data service will handle.

   The default value is 100,000.

   Enter a value between 0 and 2147483647.

Configuring Generate Reports in Services Settings

If you are running services and P6 on the same server, you should keep the defaults. If you want the server to generate reports immediately, you should set the Interval low (for example, 10s) and the Concurrent Threads high (for example, 20). Remember that if the server is actively generating reports, all users will experience delays in the application.

To configure the Generate Reports settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.

3) In the sidebar select **Services/Job Services.**
4) Select **Generate Reports**.
   a. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d.
   b. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.
   c. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

Configuring Checkin Enterprise Data in Services Settings

If you are running services and P6 on the same server, you should keep the defaults.

To configure the Checkin Enterprise Data settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Checkin Enterprise Data**.
   a. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.
   b. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

      The default value is 10s.

      Enter a value between 1s and 24d.
   c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

      The default value is 2.

      Enter a value between 0 and 20.

Configuring Checkout Enterprise Data in Services Settings

If you are running services and P6 on the same server, you should keep the defaults.

To configure the Checkout Enterprise Data settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Checkout Enterprise Data**.
   a. In the **Active Mode** field, select true if you want jobs processed continuously until all jobs finish. Select false if you want each job processed according to the Interval.

b. In the **Interval** field, enter the amount of time to wait before running the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds).

   The default value is 10s.

   Enter a value between 1s and 24d.

c. In the **Concurrent Threads** field, enter the number of processes used for this service on this server. A value of 0 indicates that that this job will not run on this server.

   The default value is 2.

   Enter a value between 0 and 20.

Configuring Printing in Services Settings

If you are running services and P6 on the same server, you should keep the defaults.

To set your rename document folder settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Services/Job Services.**
4) Select **Preview Baseline**.
   a. In the **Interval** field, enter the amount of time the Preview Baseline service will wait before scheduling the next available job (in 1d1h1m1s format, specifying only numbers without letters implies milliseconds). When P6 initiates the Printing service, it will attempt to run immediately but switch to running as a job service if it takes too long to start.

      The default value is 10s.

      Enter a value between 1s and 24d20h31m23s647.

   b. In the **Concurrent Threads** field, enter the number of processes used for the Preview Baseline service on this server. A value of 0 indicates that the service is not available on this server.

      The default value is 2.

      Enter a value between 0 and 20.

   c. In the **Active Mode** field, select **true** if you want jobs processed continuously until all jobs finish. Select **false** if you want each job processed according to the Interval.

Configuring P6ProCloudConnect Settings

To configure settings for P6 Pro Cloud Connect:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **P6ProCloudConnect**.

> **Note**: Changes to these settings require you to restart the P6 server.

4) In the **FetchSize** field, enter the maximum number of rows gathered in a database block. The default value is 254. You can enter a value between 0 and 2147483647.
5) In the **TaskMaxTime** field, enter the maximum time allowed for a P6 Pro task to complete. A job consists of one or more P6 Pro tasks. The default value is 5m.

6) In the **TransactionMaxInactiveInterval** field, enter the timeout interval for an inactive session that has a pending database transaction. The default value is 15m.
7) In the **SessionMaxInactiveInterval** field, enter the timeout interval for an inactive session. The default value is 2h.
8) In the **Mode** drop-down menu, you can select **Username Token Profile** or **SAML Token Profile**. The default value is **Username Token Profile**.

Configuring GeoCodeProvider Settings

Configuring your Geo Code Provider settings will allow you to use the locations feature in P6. With the locations feature, you can assign locations to projects, activities, and resources so you can later report in Analytics based on geographical location.

To set your GeoCodeProvider settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **GeoCodeProvider**.

> **Note**: Changes to these settings require you to restart the P6 server.

a. In the **GeoCodeProvider** drop-down menu, select your provider:
   - Oracle GeoCoder
   - Third Party Geocoder
   - None

b. In the **Geocode Provider URL** field, enter the URL for your geocode provider.

> **Note**: The P6 server may have trouble starting if it cannot connect to the Geo Code URL. On the machine where you installed P6, test the URL in a browser to ensure you can connect before you enter the URL in this setting.

For the Oracle GeoCoder, the default value is http://elocation.oracle.com/geocoder/gcserver.

For a third-party geocoder, use the URL associated with your geocoder.

> **Note**: If you use the Oracle GeoCoder, you must also set your Web Proxy Server to www-proxy.us.oracle.com on the Web Proxy page for your configuration.

Configuring Integration API Server Settings

To configure P6 Integration API and P6 to work together, you will need to set the P6 Integration API settings in the Primavera P6 Administrator.

> **Note**: For more information on the Primavera P6 Administrator see ***Primavera P6 Administrator Setup Tasks*** (on page 9).

To set your Integration API server settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Integration API Server**.
4) In the **Session Timeout** field, enter the number of minutes when an idle connection will end.

   The default value is 120.

   Enter a value between 1 and 24d.
5) In the Security Authenticate **Mode** field, select one of the following modes:

   Username Token Profile

   SAML Token Profile

   The default value is Username Token Profile.
6) To configure RMI settings:
   a. Select **Enable** to enable the RMI server. You need to enable the RMI server only if you are using P6 Integration API.
   b. P6 Integration API supports three modes. Depending on the mode you are using, do one of the following:
      - Select **Enable Compression** to enable compression service mode.
      - Select **Enable SSL** to enable SSL service mode.
      - Select **Enable Standard Service** to enable Standard service mode.
   c. In the **Registry Port** field, enter the port for the RMI Registry. The default value is 9099.
   d. Depending on which mode you enable, set the corresponding port for that mode:
      - In the **Compression Service Port** field, enter the port to use for Compression service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

        The default value is 0.
      - In the **SSL Service Port** field, enter the port to use for SSL service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

        The default value is 0.
      - In the **Standard Service Port** field, enter the port to use for Standard service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

        The default value is 0.
7) In the **File Location** field, enter the full path to the Keystore file.
8) In the **Keystore Password** field enter the Keystore password.

About Configuring P6 EPPM Web Services in the Primavera P6 Administrator

One P6 EPPM Web Services server instance can control more than one database and you can specify an authentication mode for a database through the Authentication Configuration wizard.

You can use the Primavera P6 Administrator to set the authentication mode, token profiles and message protection settings. If you use SAML for P6 EPPM Web Services, you must use Single Sign-On or LDAP authentication for P6 EPPM. You must configure additional settings for LDAP authentication with secure communication (SSL) between the P6 EPPM Web Services server and the LDAP server.

To configure P6 EPPM Web Services and P6 to work together, you will need to set the P6 EPPM Web Services settings in the Primavera P6 Administrator.

Note:

- A P6 EPPM Web Services configuration might include database instances that are not set to the same authentication mode as the P6 EPPM Web Services server. If a user connects and requests a database that is set to a different authentication mode than the P6 EPPM Web Services server, an error message displays. The user must select a database that matches the authentication mode set for the P6 EPPM Web Services server.
- For more information on the Primavera P6 Administrator see ***Primavera P6 Administrator Setup Tasks*** (on page 9).
- See the *P6 EPPM Web Services Programming Guide* for more information.

Configuring Authentication Mode for P6 EPPM Web Services

To set your authentication mode:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Authentication**.
4) In the **Mode** drop-down menu, select the method clients use for authentication. The default value is Username Token Profile. You can select one of the following:
   - **Username Token Profile**: Oracle recommends using this authentication mode. It defines how a web service client application can supply a user name and an optional password in the message request that the web service server can use to authenticate the requester's identity.
   - **SAML Token Profile**: Security Assertion Markup Language (SAML) defines an XML-based mechanism for exchanging messages that contain security information in the form of assertions.
   - **Cookies**: This option requires you to call the Authentication service Login operation to establish a session and obtain a cookie before you can use any other P6 web service.
   - **OWSM**: This option lets you use Oracle Web Services Manager to manage P6 EPPM Web Services security policies and to monitor authentication and authorization attempts.

Notes:

- See the *P6 EPPM Web Services Programming Guide* for more information.
- Changes to this setting require you to restart the P6 server.

Configuring Username Token Profile Settings for P6 EPPM Web Services

To set your Username Token Profile settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Authentication/Username Token Profile/Nonce**.
   a. Select **Require Nonce** to enable nonce.
      Nonce is a token that contains a random value and is used to prevent attacks.
   b. In the **Nonce Cache Timeout** field, enter the value for the Nonce cache timeout. The value specified indicates how long the nonce remains cached before it is deleted.
      The default value is 10m.
      Enter a value between 5m and 24d.
   c. Select **Require Created** to enable the Username token timestamp.
      Requiring a Created element allows the server to determine whether the difference between two timestamps falls within an allowable window of time and can then reject any messages that exceed the window.
   d. In the **Timeout** field, enter the value for the Created timestamp timeout. You can specify a minimum of 5m.
      The default value is 10m.
      Enter a value between 5m and 24d.

Configuring SAML Token Profile Settings for P6 EPPM Web Services

To set your SAML Token Profile settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Authentication/SAML Token Profile.**
   a. In the Require Signed SAML Token field, select true to require signed SAML tokens or false to require unsigned SAML tokens.
   b. In the **SAML Version** field, select one of the following:
      - **1.1**
      - **2.0**
      - **Both**
4) To configure **SAML Tokens** settings:

a. Select **Disable Timeout** to use **IssueInstant Timeout** and **AuthenticationInstant Timeout** fields.
b. In the **Issuer** field, enter the valid issuer for the SAML token. Use a space to separate multiple valid issuers. For example,

   http://your.saml.issuer.com
c. In the **IssueInstant Timeout** field, enter the value for the IssueInstant timeout. The value specified indicates the maximum time allowed between the time the token is issued and the time the token is received by the web service.

   The default value is 5m.

   Enter a value between 5m and 24d.
d. In the **AuthenticationInstant Timeout** field, enter the value for the AuthenticationIssueInstant timeout. The value specified indicates the maximum time allowed between the time the token is issued, the time the user is authenticated, and the time the token is received by the web service.

   The default value is 5m.

   Enter a value between 5m and 24d.

5) To configure **Signed SAML Tokens** settings:
   a. In the **KeyStore Type** list, select the KeyStore type.

      The default value is JKS. JCEKS is also supported.
   b. In the **File Location** field, enter the absolute path to the keystore file. This file must exist on the local filesystem. For example,

      `c:\keystore\keystore.jks`
   c. In the **KeyStore Password** field, enter keystore password.
   d. In the **Certificate Alias** field, enter alias for the client certificate containing the public key.

      The default value is alias.
   e. In the **Private Key Alias** field, enter the alias for the private key.

      The default value is privatekeyalias.
   f. In the **Private Key Password** field, enter the password for the private key alias.

Configuring Message Protection Settings for P6 EPPM Web Services

To set your message protection settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Message Protection.**
   a. Select **Require Timestamp** if incoming SOAP messages must contain the WS-Security Timestamp.
   b. Select **Require Digital Signatures for Incoming Messages** to require that incoming SOAP messages are signed and conform to Web Service Security 1.1 standards.

> **Note**: To access Web Services, you must configure all Web Services settings to get encryption and digital signatures to work. If you do not want to use encryption or digital signatures, you must set this setting and

the Require Encryption setting to false.

c. Select **Require Encryption for Incoming Messages** to require incoming SOAP messages are encrypted and conform to Web Service Security 1.1 standards. When this setting is selected, at least one element in each P6 EPPM Web Services request message must be encrypted.

Note:

- To access Web Services, you must configure all Web Services settings to get encryption and digital signatures to work. If you do not want to use encryption or digital signatures, you must set this setting and the Require Encryption setting to false.
- When the Encrypt Response setting and the Require Encryption for Incoming Messages setting are both set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
- When the Encrypt Response setting is Encrypt only if request is encrypted and Require Encryption for Incoming Messages setting is set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
- When the Require Encryption for Incoming Messages setting is set to false, both encrypted and un-encrypted incoming messages are accepted. This setting provides flexible interoperability with multiple Web Services clients simultaneously, without compromising security.

d. In the **Encrypt Response** list, select the encryption response options for outgoing messages. This setting governs when responses will be returned as encrypted.

The default value is Encrypt only if request is encrypted.

e. In the **Keystore Type** list, select the KeyStore type.

The default value is JKS.

f. In the **File Location** field, enter the absolute path to the keystore file. This file must exist on the local filesystem. For example,

`c:\keystore\keystore.jks`

g. In the **Keystore Password** field, enter KeyStore password.

h. In the **Private Key Alias** field, enter alias for the private key in KeyStore.

The default value is alias.

i. In the **Private Key Password** field, enter password for the private key.

j. In the **Encrypt Response** field, select whether to encrypt outgoing messages. You can use this setting only when you enable encryption for incoming messages.

- **Note**: When the Encrypt Response setting and the Require Encryption for Incoming Messages setting are both set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
- When the Encrypt Response setting is Encrypt only if request is encrypted and Require Encryption for Incoming Messages setting is

set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.

When the Require Encryption for Incoming Messages setting is set to false, both encrypted and un-encrypted incoming messages are accepted. This setting provides flexible interoperability with multiple Web Services clients simultaneously, without compromising security.

Configuring P6 Team Member Settings

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Team Member** if you want to alter the following default values:

Note: Changes to these settings require you to restart the P6 Team Member server.

- **Initial connection pool size**: 10
- **Maximum active database connections**: 150
- **Maximum idle database connections**: -1
- **Minimum idle database connections**: 10
- **Enabled:** Selected
- **Severity Level**: Error

Note: Other Severity Level options include the following:

- **off**
- **fatal**
- **warn**
- **info**
- **debug**
- **trace**
- **all**

- **Log File Name**: `p6tmweb.log`

Configuring Diagnostics Settings

Diagnostics Settings allows you to track specific tasks that could be causing your application to run slowly.

To set your diagnostics settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Diagnostics**.

Note: Changes to these settings require you to restart the P6 server.

4) To configure **Metrics Collector** settings:
   a. Select **Metric Collection** if you want poorly performing issues to be tracked. The default value is unselected.
   b. **ThresholdLimit** is the amount of time a browser request pends before being tracked as a poorly performing issue. The default value is 5 milliseconds.
   c. **CollectionSize** is the number of poorly performing issues that are tracked. The default value is 100.

Notes:

- The number entered for ThresholdLimit should be set to the average processing time of the application.
- When the time taken to complete a browser request exceeds the ThresholdLimit, the task is tracked as poorly performing issue.
- CollectionSize can be adjusted based on the amount of memory in your machine. 100 is the average for a machine with 8GB of RAM available. Oracle recommends using the default value of 100 tracked issues.

5) To configure **Tracer** settings:
   a. Select **Enable** to send debugging messages to the Tracer application. Leave this option clear if you do not want debugging messages sent.
   b. Select **Use Background Send Thread** to use the background thread to send TCP messages to tracer. Leave this option clear if you don't want to use the background thread to send TCP messages.
   c. In the **Server Name** field, enter the destination IP address or hostname for sending tracer information.

      The default value is localhost.
   d. In the **Port** field, enter the port to use for the Tracer socket connection.

      The default value is 9210.

Authentication in P6 EPPM

This chapter describes the authentication modes for P6 EPPM and outlines the steps required to implement an authentication scheme. It also details steps on how to import user information from an LDAP server.

Note: If you are using LDAP, you need to verify your field mappings and alter them to match the fields for your LDAP environment. See ***Provisioning LDAP User Information for the First Time*** (on page 77) for details.

Authentication Modes in P6 EPPM

To manage how users can access your applications, use authentication and authorization mechanisms. Authentication is the process of validating user identity and authorization is how you control what resources and data your users can access.

P6 uses multiple settings to support authentication. These settings also control the authentication used for all P6 EPPM applications except P6 EPPM Web Services. You set authentication settings in the Primavera P6 Administrator's Authentication tab.

P6 EPPM supports these authentication modes:

- **Native** is the default mode for P6 EPPM. In Native mode, the P6 EPPM database acts as the authority and the application handles the authentication of the user who is logging into that application.
- **Single Sign-On (SSO)** controls access to Web applications. In SSO mode, the applications are protected resources. When a user tries to log in, a Web agent intercepts the request and prompts the user for login credentials. The Web agent passes the user's credentials to a policy server, which authenticates them against a user data store. With SSO, once the users log in, they are logged in to all Web applications during their browser session (as long as all Web applications authenticate against the same policy server).
- **Lightweight Directory Access Protocol (LDAP)** authenticates users through a directory and is available for all applications. You can use LDAP referrals with Oracle Internet Directory and Microsoft Windows Active Directory. LDAP referrals allow authentication to extend to another domain. You can also configure multiple LDAP servers, which supports failover and enables you to search for users in multiple LDAP stores. An LDAP directory server database confirms the user's identity when they attempt to login to the application.

> **Note**: For Oracle Internet Directory, referrals only work when you configure the directories to search anonymously.

Regardless of the authentication scheme you choose, the P6 EPPM database controls user authorization.

Choosing an Authentication Scheme

To specify the authentication scheme you want to use for P6 EPPM applications, use the P6 EPPM Authentication tab of the Primavera P6 Administrator. Although you specify authentication modes for client/server applications and Web applications separately, you must use a consistent authentication scheme within P6 EPPM. For example, client/server and Web applications must *both* be configured for either LDAP authentication or native authentication.

Authentication mode is database-driven, so the configuration utility enables you to first specify a database connection setting, then choose authentication modes for the applications that access that database.

For LDAP authentication, the configuration utility also enables you to specify LDAP servers, map LDAP attributes to P6 EPPM database fields, and provision users.

Login Procedures and Authentication in P6 EPPM

The authentication modes have different login procedures:

In Native mode

P6 EPPM presents a login dialog box that prompts for a user name and password. Depending on whether you enabled the password policy option in Application Settings in P6, the user may have to create a strong password.

In LDAP mode

- All P6 EPPM applications require a login password.
- Since the LDAP directory stores and authenticates passwords, users cannot change their passwords in P6 EPPM.

In Single Sign-On mode

- For P6, the Single Sign-On server requests and validates login credentials. Once a user is authenticated, the launch page for P6 appears so the user can select a database and language.

  Users cannot change their passwords in P6 EPPM because passwords are stored and authenticated against a directory server user store.

Authentication Configuration Process in P6 EPPM

By default, all P6 EPPM applications use Native authentication. After you install your P6 EPPM applications, you can choose a different authentication scheme.

> **Note:** If you are upgrading from a previous version of P6 EPPM, see the *P6 EPPM Upgrade and Configuration Guide* before modifying the authentication settings.

Your database controls your Authentication mode.

- When using SSO mode, P6 Integration API and P6 EPPM Web Services use LDAP mode.
- If using LDAP authentication, you can specify LDAP servers, configure more than one LDAP server for each database instance, map LDAP attributes to P6 EPPM database fields, and provision users.

Follow the guidelines below to specify an authentication scheme and perform additional configuration tasks for authentication:

- Configure administrative settings using the Primavera P6 Administrator. See ***About the Authentication Tab in the Primavera P6 Administrator*** (on page 74) for details on these settings.
- When using LDAP mode, provision user information from the LDAP server using P6. See ***Provisioning LDAP User Information for the First Time*** (on page 77) for details.
- Configure Oracle Analytics Server to use with P6 when using LDAP or SSO mode. See the *P6 EPPM Oracle Analytics Server Configuration Guide* for more information.

Tips

- If multiple instances within a configuration point to the same database, P6 EPPM will use the Authentication Mode for the first instance in the list.
- To enable you to configure more than one LDAP server for each database instance, you can set multiple LDAP Connection Settings for authentication. Right-click the **LDAP Connection Settings** folder to duplicate, delete, copy, paste, or test a configuration. When P6 authenticates a user, it will search each LDAP server in order for a user name that matches the login name and will use the first matching user to verify the password.
- A configuration for P6 might include database instances that are not set to the same authentication mode as the P6 server. If a user connects and requests a database that is set to a different authentication mode than the P6 server, an error message will display; the user must select a database that matches the authentication mode set for the P6 server.

About the Authentication Tab in the Primavera P6 Administrator

The information below details all settings available from the Authentication tab of the Primavera P6 Administrator.

Notes:

- See the procedures in the *P6 EPPM Installation and Configuration Guide* if you are upgrading from a previous version of P6 EPPM software before modifying the authentication settings.
- See ***Authentication in P6 EPPM*** (on page 71) for an overview of the authentication configuration process and instructions on how to provision LDAP user information.
- If you are using LDAP, you need to verify your field mappings and alter them to match the fields for your LDAP environment. See ***Provisioning LDAP User Information for the First Time*** (on page 77) for details.

Configuring Web Single Sign-On Settings in the Primavera P6 Administrator

Single Sign-On (SSO) controls access to Web applications. In SSO mode, the applications are protected resources. When a user tries to log in, a Web agent intercepts the request and prompts the user for login credentials. The Web agent passes the user's credentials to a policy server, which authenticates them against a user data store. With SSO, once the users log in, they are logged in to all Web applications during their browser session (as long as all Web applications authenticate against the same policy server).

To set your web Single Sign-On settings:

1) Open the Primavera P6 Administrator.
2) In the **Authentication** tab, select your configuration from the drop-down list.
3) Select **Authentication**.
4) In the **Login Mode** drop-down list, select **WebSSO**.
5) To configure **Web Single Sign-On** settings**:**

> **Note**: Changes to these settings require you to restart the P6 server.

a. Select **Allow Alternate Login Attribute** when using Oracle Single Sign-On, and you want to use an SSO login attribute other than the P6 user name. For example, you will enter your email address when authenticating Oracle Single Sign-On, but your P6 user name will map to the LDAP's UID field.

b. In the **User Name Header Key** field, enter the name of the HTTP Header you specified in the policy server.

   The value you specify must match the property you created under the policy domain/realm, where the Web server for P6 resides.

   For Oracle Single Sign-On, the value should be **Proxy-Remote-User**. The Proxy-Remote-User should match the LDAP server attribute that maps to the P6 EPPM database USER_NAME field. See ***Provisioning LDAP User Information for the First Time*** (on page 77) for details.

   For Oracle Access Manager, the value should be OAM_REMOTE_USER, which is the default value.

c. In the **Context Path Override** field, enter the path used to pass web requests from the Single Sign-On Web server to the P6 server. The default listed is the value for P6 (/p6).

> **Note:** If you enable the Allow Alternate Login Attribute setting, you must configure the Header Key and LDAP Search Attribute settings. You must also configure the LDAP settings for the appropriate database instance to establish a connection to the LDAP server. See ***Provisioning LDAP User Information for the First Time*** (on page 77) for details.

d. In the **Header Key** field, enter the HTTP Header Key which contains the global user ID. The default value is Osso-User-Guid.

e. In the **LDAP Search Attribute** field, enter the LDAP attribute searched by the Header Key to authenticate users. The default value is orclguid.

> **Note**: You must configure the LDAP settings for the appropriate database instance to establish a connection to the LDAP server.

Configuring LDAP Settings in the Primavera P6 Administrator

Lightweight Directory Access Protocol (LDAP) authenticates users through a directory and is available for all applications. You can use LDAP referrals with Oracle Internet Directory and Microsoft Windows Active Directory. LDAP referrals allow authentication to extend to another domain. You can also configure multiple LDAP servers, which supports failover and enables you to search for users in multiple LDAP stores. An LDAP directory server database confirms the user's identity when they attempt to login to the application.

To set your LDAP settings:

1) Open the Primavera P6 Administrator.
2) In the **Authentication** tab, select your configuration from the drop-down list.
3) Select **Authentication**.

4) In the **Login Mode** drop-down list, select **LDAP**.
5) To configure **LDAP** settings:

> **Note**: Changes to these settings require you to restart the P6 server.

a. In the **SSL Certificate Store** field, enter the full path to the keystore that holds the SSL certificate for the LDAP server.
b. In the **SSL Store Password** field, enter the password for the keystore that holds the SSL certificate.

Configuring HTTPS Settings in the Primavera P6 Administrator

Native is the default mode for P6 EPPM. In Native mode, the P6 EPPM database acts as the authority and the application handles the authentication of the user who is logging into that application.

To set your HTTPS settings:

1) Open the Primavera P6 Administrator.
2) In the **Authentication** tab, select your configuration from the drop-down list.
3) Select **Authentication**.
4) In the **Login Mode** drop-down list, select **Native**.
5) To configure **HTTPS** settings:

> **Note**: Changes to these settings require you to restart the P6 server.

a. Select **Enable HTTPS** if users do not use an HTTPS URL for the login page. If selected, P6 redirects the users to an HTTPS login page to complete the login process. You must enable SSL communication for the application server or web server.

   Leave this option clear if you do not want users redirected to an HTTPS URL for login.

> **Caution**: If kept as clear, the application server will receive the passwords as clear text when a user logs in to the application.
>
> **Note**: If you have problems accessing the P6 application and you enabled this setting, you will need to verify that you enabled the SSL listen port on your application server and that it matches the Authentication/HTTPS/Port setting below. You should also check the WebAccessLog to ensure there is not an "SSL disabled" error message.

b. In the **Port** field, enter the port number used for SSL. You must enter the port number only if you enable the HTTPS option.

   The default value is 443.

   Enter a value between 0 and 2147483647.

Configuring Database Instance Settings in the Primavera P6 Administrator

To set your database instance settings:

1) Open the Primavera P6 Administrator.

2) In the **Authentication** tab, select your configuration from the drop-down list.
3) Select your **Database Instance**.
4) In the **Authentication Mode** drop-down list, select one of the following authentication modes:

> **Note**: Changes to this setting require you to restart the P6 server.

- Native
- WebSSO
- LDAP

> **Note**: Other authentication modes available in this list are used for P6 EPPM Cloud Service.

For more information about each authentication mode, refer to ***Authentication Modes in P6 EPPM*** (on page 72).

Provisioning LDAP User Information for the First Time

To provision LDAP user information for P6 EPPM for the first time:

> **Caution:** Ensure that all users are logged out of P6 EPPM to ensure the Primavera P6 Administrator saves your new settings.
>
> **Note:** Verify your default global profile; the global profile will be assigned to all provisioned users.

1) Log in to the Primavera P6 Administrator. See ***Primavera P6 Administrator Setup Tasks*** (on page 9) for details.
2) From the **Authentication** tab:
   a. Select **Authentication** and ensure that **Login Mode** is set to **NATIVE**.
   b. Select **Database instance** and ensure that **Authentication Mode** is set to **Native**.
3) Restart the application server instance.

> **Note:** If you do not restart the application server instance, the Primavera P6 Administrator will restore settings to the previous configuration.

4) Log in to P6 as a user with privileges to create a new user.
5) Follow the instructions in the *Creating User Accounts for P6 EPPM* section of the *P6 EPPM Application Administration Guide* to add a new user (in Native mode) that matches an LDAP server user with rights to read the LDAP directory.

> **Note**: Ensure that you have a P6 user and LDAP user that match.

   a. Assign a global profile that contains privileges to add new users and search the LDAP directory. See the *Configuring User Access* section of the *P6 EPPM Application Administration Guide* for details.

b. Assign the appropriate project profiles and module access. See the *Configuring User Access* section of the *P6 EPPM Application Administration Guide* for details.

6) Log in to the Primavera P6 Administrator.
7) From the **Authentication** tab:
   a. Select your configuration.
   b. Change **Login Mode** to **LDAP**.
   c. Select your **Database instance** and set **Authentication Mode** to **LDAP**.
   d. To configure your **LDAP Connection Settings[n]**.
      1. Select **Enable SSL** if you are using SSL.
      2. Select **Chase Referrals** to enable chase referrals.
      3. In the **Host** field, enter the host name of your LDAP server.
      4. In the **Port** field, enter the port number of your LDAP server. The default value is 636.
      5. In the **Username** field, enter the LDAP user name that has privileges to log in to the LDAP server and perform LDAP searches.
      6. In the **Password** field, enter the password for the user name you entered above.
      7. In the **Base Directory Node** field, enter the base directory node string that represents where the LDAP tree should search during login or provisioning. For example:
         `dc=ad, dc=Marketing, dc=CompanyABC, dc=com`
      8. In the **Preferred Pool Size** field, enter the preferred pool size. The default value is 10.
      9. In the **Maximum Pool Size** field, enter the maximum pool size. The default value is 20.
      10. In the **Connection Timeout (in seconds)** field, enter how long (in seconds) the system should try to connect to the LDAP before timing out. The default value is 300.
      11. Expand **Field Map**.

      Note: Except where noted, these settings represent what you will enter for an Oracle Internet Directory (OID) LDAP server and a Microsoft Active Directory.

      12. In the **Username** field, enter the LDAP field name that holds the user's login ID. For example:
          `uid`
          or
          `samaccountname` (for Microsoft Active Directory)
      13. In the **Email ID** field, enter the LDAP field name that holds the user's email address. For example:
          `mail`
      14. In the **Actual Name** field, enter the LDAP field name that holds the user's full name. For example:
          `cn`
          or
          `displayname` (for Microsoft Active Directory)

15. In the **Office Phone** field, enter the LDAP field name that holds the user's phone number. For example:

    ```
    telephoneNumber
    ```

e. Select **Test Connection**.

f. Click **Save Changes**.

8) Restart the application server instance.

> **Note:** If you do not restart the application server instance, the Primavera P6 Administrator will restore settings to the previous configuration.

9) Log in to P6 as the new user you created when you were in Native mode.

10) On the **Users** page, click the **Add** icon and do the following:

a. Add users as described in "Adding Users in LDAP or SSO Authentication Mode" in the *P6 EPPM Application Administration Guide* for details.

b. If needed, change the configuration settings for the new users. See "Configuring User Access" in the *P6 EPPM Application Administration Guide* for details.

Tips

- When you provision users, changed records are updated in the P6 EPPM database and new users are added. However, users that have been deleted from the LDAP directory or LDIF file are not automatically removed from the P6 EPPM database. You must manually delete these users.
- You can copy a current user's settings to all the new users you create when you bring them in from LDAP.

P6 Setup Tasks

This section has information about how to setup your P6 deployment for end-users, such as:

- Precompiling the application
- Application access information
- Client and Browser configuration settings
- Using Oracle Secure Global Desktop
- Server plug-ins

Also, this section provides information on how you can change the application's database connection and configure a separate server for Job Services.

In This Section

Precompiling P6

Although not required for P6, precompilation helps to reduce the amount of time it takes for users to load P6 pages for the first time. The following instructions apply to all application servers supported by P6 EPPM. You need to perform these instructions while the application server is running.

> **Note**: Your application server must be listening on a HTTP port (non-SSL) for the precompile utility to work. You can later disable the HTTP port after precompilation if you will be using only HTTPS.

To precompile P6:

1) Locate the precompile_utility folder. It will be in the location where you installed P6 EPPM. For example:
   - **C:\P6EPPM_1\p6\precompile_utility** (with Windows)
   - **/usr/P6EPPM_1/p6/precompile_utility** (with UNIX or Linux)
2) Run a command similar to the following:

   ```
   java -jar JSPPrecompile.jar -u <baseURL> -f <inputfile>
   ```

   where `<baseURL>` is the P6 URL and `<inputfile>` is the location of the P6 EAR file.

Note: The file path of the P6 EAR file cannot contain spaces.

For example, the command should look similar to the following if you have a standard P6 installation on WebLogic:

If you deployed P6 in WebLogic:

```
java -jar JSPPrecompile.jar -u http://localhost:7001/p6 -f
<p6home>/p6.ear
```

where <p6home> is the location you installed P6. For example, C:\P6EPPM_1\p6\p6.ear or /usr/P6EPPM_1/p6/p6.ear.

If you used the P6 EPPM Configuration Wizard to deploy P6:

```
java -jar JSPPrecompile.jar -u http://localhost:8203/p6 -f
p6home/p6.ear
```

where *p6home* is the location where you installed P6. For example, C:\P6EPPM_1\p6\p6.ear or /usr/P6EPPM_1/p6/p6.ear.

Accessing P6 from Client Browsers using WebLogic

To access P6 from Client Browsers using WebLogic:

1) Launch a supported browser.
2) Enter the URL using the structure,

   http://*serverIP*:*listenport*/*ContextRoot*/login

   where *listenport* is 7001 (if you manually deployed P6) or 8203 (if you used the wizard to deploy P6) by default and *ContextRoot* is p6 by default.

   Examples:

   http://*serverIP*:7001/p6/login

   http://*serverIP*:8203/p6/login

Tips

- HTTPS settings are available in the Primavera P6 Administrator. If you have set the HTTPS/Enabled setting to true, ensure that your application server or front-end Web server is listening on the specified HTTPS port. See ***Configuring HTTPS Settings in the Primavera P6 Administrator*** (on page 76) for more information on the HTTPS settings.
- To select the authentication mode for P6, use the Primavera P6 Administrator. See ***About the Authentication Tab in the Primavera P6 Administrator*** (on page 74) for information about authentication configuration settings.
- On the P6 login window, SSO users can choose to bypass the login window the next time by selecting the appropriate option. See ***Configuring Application Settings in the Primavera P6 Administrator*** (on page 33) for more information.
- You can modify the context root. For information about context root configuration, refer to your application server documentation. Also, URLs might be case-sensitive, depending on your application server configuration.
- See *Tested Configurations* for a list of supported application servers with version numbers.
- For a full list of tested configurations for P6, see *Tested Configurations*.

Configuring Settings on Client Machines

Features, such as exporting to Excel and resolving null pointer exceptions, require additional configuration settings on client machines. Some settings are required for a feature to work, while others are only necessary under certain conditions. You must configure your settings on each client machine requiring access to the feature.

Configuring Browser Settings for Mozilla Firefox

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

1) Open **Mozilla Firefox**.
2) Go to **Tools**, **Options**.
3) In the **Options** dialog box:
   a. Select the **Security** tab.
   b. Select the **Warn me when sites try to install add-ons** option.
   c. Select the **Content** tab.
   d. Deselect the **Block pop-up windows** option.
   e. Click **OK** to save your options and close the dialog box.

Configuring Browser Settings for Safari

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

1) Open **Safari**.
2) From the **Settings** drop-down, select **Preferences**.
3) In the **General** dialog box, select **Security**.
4) In the **Web Content** section:
   a. Select the following:
      - **Enable Plug-ins**
      - **Enable Java**
      - **Enable JavaScript**
   b. Deselect **Block pop-up windows**.
5) Select **Advanced**.
6) Select **Press Tab to highlight each item on a webpage**.
7) Close the dialog box.

Tip

Complete the following steps to enable the Java plug-in:

1) From the **Settings** drop-down, select **Preferences**.
2) In the **General** dialog box, select **Security**.
3) In the **Java** section, select **Run in Unsafe Mode** for the P6 URL.

Using Oracle Secure Global Desktop

You can use Oracle Secure Global Desktop to publish P6 EPPM and P6 Professional to remote users.

See the *Tested Configurations* document for supported versions of Oracle Secure Global Desktop.

For details on publishing Windows desktops, see the *Oracle Secure Global Desktop Administration Guide*. You will find the Secure Global Desktop documentation library here: http://www.oracle.com/technetwork/documentation/sgd-193668.html.

Application Server Plug-Ins for P6 EPPM

Application servers offer a variety of plug-ins that enable you to configure a front-end Web server other than the one provided with the application server. For procedures on configuring a Web server plug-in, refer to the application server's documentation.

About the Database Configuration Wizard for P6

The Database Configuration wizard enables you to change the database connection settings you specified when you installed P6.

The database you select during configuration stores one or more P6 EPPM configurations, each one specifying a set of parameters that determine how P6 operates. During configuration, you select an existing P6 EPPM configuration or create a new one. Later, you can use the Database Configuration wizard to select a different P6 EPPM configuration or create a new one.

Notes:

- After selecting a different P6 EPPM configuration or creating a new configuration, you must stop and restart the P6 application server for the changes to take effect.
- You should protect the Database Configuration file (dbconfigpv) for security reasons. Depending on which method you used to protect the file, you might have to relocate the file to the production server to run the wizard after implementation. See "Files to Protect after Implementation" in the *P6 EPPM Security Guide*.

Changing Database Connection Settings for P6

To change database connection settings for P6:

1) Do one of the following:

- On Windows platforms, run **dbconfigpv.cmd** (located in the *p6home* directory that you specified when installing P6).
- On UNIX platforms, change to the *p6home* directory that you specified when installing P6, and **run dbconfigpv.sh**.

2) On the **Setup and Configuration of the Primavera P6 Database** dialog box, select the database type.
3) On the **Please enter the following information. . .** dialog box:
   a. Specify the database connection parameters. Type your database user name (for example, pubuser) and password, the database name, host address, and host port. The database name, host address, and host port are specific to your database installation. The Database Host Port field displays the default port for the database type you selected. You can edit this port.
   b. To use the SSL protocol to securely communicate between the P6 application server and the database server, select the SSL option. If you select the SSL option, you must specify an SSL-enabled port number in the Database Host Port field.

      Notes:

      - See the appropriate database server documentation and the My Oracle Support's Knowledge Articles for information on configuring SSL.
      - Using the SSL protocol will impact database performance.

   c. Ensure that the Public Group ID is 1 for a standard configuration.
4) If there is an existing Primavera configuration, on the **The installer has detected. . .** dialog box, choose whether you want to use it, or create a new configuration.

   Note: If you are upgrading from a previous version of P6 against the same database, choose the option to create a new configuration. This is necessary to accommodate newly added configuration settings. See ***Primavera P6 Administrator Setup Tasks*** (on page 9) for more information about configurations.

   If you have not created a Primavera configuration, the **The installer has detected. . .** dialog box does not appear and the installation process automatically creates a default configuration named Primavera P6 Configuration. You can edit the settings for this configuration through the Primavera P6 Administrator.
5) When the message displays to confirm that the database configuration has completed successfully, click **OK**.
6) On the **End of Installation** screen, click **Exit**.

Configuring a Separate Server for Job Services

For medium to large deployments, Oracle recommends setting up a dedicated node for job services, and disabling job services from running on servers accepting user traffic.

Notes:

- For details on what constitutes a medium or large deployment, see the *P6 EPPM Performance and Sizing Guide*.
- These instructions assume that you have already configured the server accepting user traffic.

Oracle provides the following options to configure a dedicated node for job services:

- Standalone deployment of p6services.jar. This option provides a simple installation process and runs the job services from an independent java process. See ***Configuring a Job Services Server Using p6services.jar*** (on page 86)
- Application Server deployment of p6jobservices.war: This option provides the advantages of deployment to an application server, including remote monitoring of the health of the server, remote management of the server lifecycle, and improved error logging. This option runs job services from an application server instance that will not accept user traffic. See ***Configuring a Job Services Server Using p6jobservices.war*** (on page 87)

Configuring a Job Services Server Using p6services.jar

Follow the guidelines below to configure the dedicated job services server using p6services.jar:

1) Copy the **p6services.jar** from the *p6home* directory where you installed P6 to a node that will use job services.
2) Ensure a supported JRE is in the system path. (See the *Tested Configuration* for supported JREs.)
3) Open a new command line or terminal window.
4) Navigate to the folder where p6services.jar was copied (for example, c:\jobservices).
5) Run the services application by entering `java -Xms<MEMORY SIZE> –Xmx<MEMORY SIZE> –jar p6services.jar` in the window. (See the *P6 EPPM Performance and Sizing Guide* for the correct value for the <MEMORY SIZE> setting for your environment. The settings in the example are the recommended values.)

   The line should look similar to the following:

   ```
   java -Xms4096m –Xmx4096m –jar p6services.jar
   ```

   If you are using Sun JDK, it should look similar to the following:

   ```
   java -server -Xms4096m –Xmx4096m –jar p6services.jar
   ```
6) If a BREBootStrap.xml file is in the USER_HOME, you can specify the location to the BREBootstrap.xml file by adding the following line:

Note:

- USER_HOME refers to your home directory. For example, in Windows it could be C:\Users\<USER_NAME> or C:\Documents and Settings\<USER_NAME>; in UNIX, it could be /home/<USER_NAME>.
- If this is the first time you are launching p6services.jar, and a BREBootStrap.xml file does not exist in the USER_HOME, the

database configuration wizard will launch. Skip to the next step.

`–Dprimavera.bootstrap.home=<BOOTSTRAP_LOCATION>`

The line should look similar to the following:

```
java -Xms4096m –Xmx4096m
–Dprimavera.bootstrap.home=<BOOTSTRAP_LOCATION> -jar p6services.jar
```

where <*BOOTSTRAP_LOCATION*> is the location where the BREBootStrap.xml is located (for example, C:/USER_HOME).

7) If your organization needs to use Unicode characters, add to the JAVA_OPTS variable -Dfile.encoding=UTF-8

   The line should look similar to the following:

```
java -Xms4096m –Xmx4096m
–Dprimavera.bootstrap.home=<BOOTSTRAP_LOCATION>
-Dfile.encoding=UTF-8 -jar p6services.jar
```

   where <*BOOTSTRAP_LOCATION*> is the location where the BREBootStrap.xml is located (for example, C:/USER_HOME).

8) If this is the first time you are launching p6services.jar, and a BREBootStrap.xml file does not exist in the <USER_HOME> directory (or <BOOTSTRAP_HOME> directory if the primavera.bootstrap.home is specified), the database configuration wizard will launch.

   Follow the steps in ***Changing Database Connection Settings for P6*** *(on page 84).*

   Create a new configuration when **The Installer has detected...** dialog box appears and give this new configuration a distinct name. For example, if you chose "P6 Users" for the configuration name for the server accepting user traffic, name the new configuration "P6 Job Services."

   Note: Create a new configuration for Job Services to ensure optimal database performance. Job Services could slow down performance if it is part of the same configuration.

9) In the Primavera P6 Administrator:
   a. Locate the **Services/Enable All Services** setting for the configuration created for the job services server (for example, P6 Job Services). Set the setting to **true** to enable all services.
   b. Locate the **Services/Enable All Services** setting for the configuration created for user traffic (for example, P6 Users). Set the setting to **false** to disable all services.

Configuring a Job Services Server Using p6jobservices.war

Note: These instructions assume that you have already installed and configured WebLogic Middleware and have deployed P6. These instructions provide single WebLogic node deployment steps, but you can target the application to a WebLogic cluster.

Follow the guidelines below to configure a dedicated job services server using p6jobservices.war:

1) Create a new directory in the P6 EPPM installation folder for p6jobservices.
2) Copy the following files from the p6home directory where you installed P6 to the new directory you created in the previous step:
   - p6jobservices.war
   - adminpv.cmd or adminpv.sh
   - dbconfigpv.cmd or dbconfigpv.sh
   - installp6keystore.bat or installp6keystore.sh
   - p6keystore.jks
   - lib folder and all files
3) In the new directory:
   a. Open **adminpv.cmd** or **adminpv.sh** in a text editor.
      - Change the PV_HOME environment variable to match the location of the new directory.
      - Change the JAVA_HOME environment variable to match the location of your JDK home directory.
      - Save changes and close the file.
   b. Open **dbconfigpv.cmd** or **dbconfigpv.sh** in a text editor.
      - Change the PV_HOME environment variable to match the location of the new directory.
      - Change the JAVA_HOME environment variable to match the location of your JDK home directory.
      - Save changes and close the file
   c. Open **installp6keystore.bat** or **installp6keystore.sh** in a text editor.
      - Change the JAVA_HOME environment variable to match the location of your JDK home directory.
      - Save changes and close the file
4) Copy the new directory to a WebLogic node where you will deploy p6jobservices.war.

   If the WebLogic Admin Server runs on a different physical node from your managed server, copy the directory to your admin server to deploy the application.

   If the PV_HOME or JAVA_HOME directory path is different from the path you modified earlier, you must update the files to reflect the actual location on the new node.

   > **Note**: If you deploy p6jobservices.war to a cluster, the directory must be present on all nodes in the cluster.

5) If you are using external encryption, generate a new password file for reading p6keystore.jks using the following command:
   - Windows: `installp6keystore.cmd -genpassfile`
   - Unix: `./installp6keystore.sh -genpassfile`

   > **Note**: For more information on encryption keys for P6 EPPM, see: Oracle Support Document 2268703.1 External Storage Of Encryption Keys For P6 EPPM at

https://mosemp.us.oracle.com/epmos/faces/DocumentDisplay?id=2268703.1

6) To create a BREBootStrap.xml file in the job services directory, run **dbconfigpv.cmd** or **dbconfigpv.sh**.
7) In the Database Configuration Wizard:
   a. Select your database type, then click **Next**.
   b. Enter the required information for connecting to your database, then click **Next**.
   c. Select the option to create a new configuration for job services, then click **Next**.
   d. Click **OK**.
   e. Check that a BREBootStrap.xml file was created in the job services directory.

> **Note**: If you deploy p6jobservices.war to a cluster, you must create a BREBootStrap.xml file on all nodes of the cluster.

8) Create a new managed server in your WebLogic domain and set the following JVM parameters for the managed server:
   - -Xms<MEMORY SIZE> -Xmx<MEMORY SIZE>

     For example: `-Xms4096m –Xmx4096m`

> **Note**: See the *P6 EPPM Performance and Sizing Guide* for the correct value for the <MEMORY SIZE> setting for your environment. The settings in the example are the recommended values.

   - -Dprimavera.bootstrap.home=<BOOTSTRAP_LOCATION>

     Where <BOOTSTRAP_LOCATION> is the location of the BREBootStrap.xml file.
   - -Dfile.encoding=UTF-8

     This is required only if your organization needs to use Unicode characters.
9) Deploy p6jobservices.war to the managed server.

   See the *P6 EPPM WebLogic Configuration Guide*.
10) Launch **adminpv.cmd** or **adminpv.sh**.
    a. Select the configuration used by job services.
    b. Expand Services and select **General**.
    c. Select the **Enable All Services** option.
    d. Select the configurations used by all other P6 EPPM web deployments and clear the **Enable All Services** option.
    e. Restart all the deployments you changed.

When upgrading your P6 EPPM environment perform the following steps:

1) Replace the following files in the job services directory with the upgraded files from your p6home directory:
   - p6jobservices.war
   - lib folder and all files
2) Launch adminpv.cmd or adminpv.sh.

a. On the Configurations tab, right-click the job services configuration.
b. Click **Update to latest version**.
c. Click **Save Changes**.

3) To redeploy the updated p6jobservices.war to your WebLogic environment:
   a. Login to your WebLogic Administration Console.
   b. In the Change Center pane, click **Lock & Edit**.
   c. In the Domain Structure pane, click **Deployments**.
   d. In the Configuration tab on the Summary of Deployments page, click **Update**.
   e. Click **Finish**.

Creating Custom URLs to Access Pages

You can create custom URL so that users can directly access pages.

In order to create custom URLs, you must be a database user, such as privuser or admuser, that can make queries against the P6 EPPM database for project wbsids. If you do not have database access to P6 EPPM, refer to your P6 EPPM database administrator.

Users can only access custom URLs to access pages as long as they have Project module access and OBS access to projects and project templates.

Any P6 EPPM user can use a custom URL, as long as they have Project module access. If the user does not have access to the projects listed in the URL, P6 EPPM will open to the Open Projects dialog box.

To create a custom URL:

1) Determine the base URL for your P6 EPPM instance.

   The base URL follows the format
   `http://<server>:<port>/p6/bookmark?uri=navigatetopage&ctx=`

   For example,
   `http://corporatep6server:8203/p6/bookmark?uri=navigatetopage&ctx=`

2) Determine the wbs_ids of the projects that you want users to access by completing the following:
   a. Log in to the P6 EPPM database with the following script and provide the relevant password when prompted:

      ```
      sqlplus <admuser or privuser>@<db_tns_names_entry>
      ```

   b. Run the following scripts for the project wbs_ids:

      ```
      column wbs_short_name format a20
      column wbs_name format a30
      select pw.wbs_id, pw.proj_id, pw.wbs_short_name, pw.wbs_name from projwbs pw inner join project p on pw.proj_id=p.proj_id where pw.proj_node_flag = 'Y' and p.project_flag='Y' and orig_proj_id is null;
      ```

      Notes:

      - In addition to returning wbs_ids and proj_ids, the last line of the script

also returns the wbs_short_name and wbs_name in order to provide you more context for each wbs_id and proj_id that you return.

- By default, the wbs_short_name and wbs_name have a length of 40 and 100 characters respectively. The first two lines of the script reduce the displayed characters of the wbs_short_name and wbs_name to 20 and 30 characters respectively in order to prevent the column length from overtaking the output.

3) Create a string of parameters and their values to describe the view. You must list the parameters in the order described in this step and separate the parameters with an ampersand. Do not include an ampersand after the last parameter. The parameters available are:
   - **projectList**: A comma-separated list of wbs_ids for the projects that you want to display.

     For example, `3165,65422,984&`
   - **key**: Determines which page will be opened.

     Supported values: `activities`

     For example, `key=activities&`
   - (Optional) **showNavigation**: Determines whether to show the header bar when P6 EPPM opens. If this parameter is not included or it is set to true, P6 EPPM opens with the header bar. If this parameter is set to false, P6 EPPM opens without the header bar.

     Supported values: `true` or `false`

     For example, `showNavigation=false`

   Note: Your string should be similar to `projectList=3165,65422,984&key=activities&showNavigation=false`

4) Percent-encode the string.

   For example, you could use URL Encoder/Decoder at http://meyerweb.com/eric/tools/dencoder/.

   Note: After you percent-encode your string, the string should be similar to `projectList%3D3165%2C65422%2C984%26key%3Dactivities%26showNavigation%3Dfalse`

5) Append the string to the base URL.

   For example:
   `http://corporatep6server:8203/p6/bookmark?uri=navigatetopage&ctx=projectList%3D3165%2C65422%2C984%26key%3Dactivities%26showNavigation%3Dfalse`

P6 Team Member Setup Tasks

This chapter includes information create a new configuration for P6 Team Member, configure P6 Team Member settings, configure Email Statusing Service for P6, and to configure IIS 8.5 for P6 Team Member.

In This Section

Creating a New Primavera P6 Administrator Configuration

To create a Primavera P6 Administrator configuration:

1) Do one of the following:
   - On Windows platforms, run `dbconfigpv.cmd` (located in the *p6home* directory that you specified when installing P6).
   - On UNIX platforms, change to the *p6home* directory that you specified when installing P6, and run `dbconfigpv.sh`.
2) On the Setup and Configuration of the Primavera P6 Database dialog box, select the database type.
3) On the Please enter the following information... dialog box:
   a. Specify the database connection parameters. Type your database user name and password, the database name, host address, and host port. The database name, host address, and host port are specific to your database installation. The Database Host Port field displays the default port for the database type you selected. You can edit this port.
   b. To use the SSL protocol to securely communicate between the P6 application server and the database server, select the SSL option. If you select the SSL option, you must specify an SSL-enabled port number in the Database Host Port field.

      Notes:

      - See the appropriate database server documentation and the My Oracle Support's Knowledge Articles for information on configuring SSL.
      - Using the SSL protocol will impact database performance.

   c. Ensure that the Public Group ID is 1 for a standard configuration.
4) Select **Create a new configuration** and then enter the name of your new configuration (for example, Team Member Configuration).
5) Click **Next**.

6) Click **OK**.

Configuring P6 Team Member Web Settings

To configure the settings for P6 Team Member Web, you must have a P6 Team Member Admin Configuration. See *Installing and Configuring P6 EPPM* for more information on how to create this configuration during a new installation of P6 Team Member Web or P6 EPPM.

To configure the settings for P6 Team Member Web:

1) Launch **Primavera P6 Administrator**.
2) Navigate to your P6 Team Member configuration, and then expand it.
3) Expand **Application**:
   a. Set the Help server URL to one of the following:
   - `http://localhost:`*listenport*`/`*ContextRoot*

     where *localhost* is your server's host name, *listenport* is your P6 Team Member port number, and *ContextRoot* is the root for your Help.
   - https://docs.oracle.com/cd/E90746_01/team_member/web/help/

     Note: Oracle recommends that you use the second URL option because it ensures that you always access the latest version of the P6 Team Member Help, including critical corrections and enhancements.

4) Expand **Team Member**:
   a. Expand **Connection Pool** if you want to alter the following default values:
      - **Initial connection pool size**: 10
      - **Maximum active database connections**: 150
      - **Maximum idle database connections**: -0
      - **Minimum idle database connections**: 10
   b. Expand **Logging** if you want to alter the following default values:
      - **Enable**: enabled
      - **Severity Level**: Error
      - **Log File Name**: p6tmweb.log

     Note: The **primavera.bootstrap.home** property determines the location of the log file.

Configuring Email Statusing Service for P6

To configure Email Statusing Service for P6:

1) From the P6 Team Member home directory (for example, C:\P6EPPM_1\tmws), extract the files from the **p6tm-email-service.zip** to any location on the application server. (That location will be referred to as EMAIL_HOME).
2) Make a backup copy of the **config.properties** file before you edit it.

3) Edit the **config.properties** file to configure the settings for the email application.

> **Note:** When you are finished editing the config.properties file, move it to a secure location.

4) In the **P6 Configuration** section, locate and specify the following:
   a. In the **p6.admin.user =** line, specify a P6 user who is assigned to at least one module access and has resource access.
   b. In the **p6.notify.user =** line, specify the email addresses, separated by commas, of users who can send Notify Task lists to other users. As you see the *P6 Help* for more information on sending team members their tasks.
   c. In the **p6.max.tmusers =** line, specify the maximum number of email recipients that can receive notification emails at one time. You should keep the number below 500 to avoid performance problems.
   d. In the **p6.bootstrap =** line, specify the location of the BREBootstrap.xml file.

      For example, the location could be one of the following: C:/P6EPPM_1/p6, C:/EMAIL_HOME, /usr/P6EPPM_1/p6, or /usr/EMAIL_HOME or you can use the following: C:\\P6EPPM_1\p6, C:\\EMAIL_HOME.
   e. In the **mail.read.schedule =** line, specify how often your email should process new messages. Use cron expressions for your formatting. For example:

      `0 */5 * * * ?`

      will process new messages every five minutes.

> **Note:** For more information on cron expressions, see http://www.quartz-scheduler.org/documentation/quartz-2.2.x/tutorials/tutorial-lesson-06.html.

5) In the **Outgoing mail (SMTP Settings)** section, locate and specify the following:
   a. In the **send.host =** line, specify the SMTP server hostname or IP address that you will use to send emails.
   b. In the **send.port =** line, specify the port number that connects to the SMTP server.
   c. In the **send.ssl =** line, specify **true** to use SSL or **false** if you will not use SSL.

> **Note:** Oracle recommends that you always use SSL in a production environment for secure communications.

   d. In the **send.starttls =** line, specify **true** to use TLS or **false** if you will not use TLS.
   e. In the **send.email =** line, specify the email address or User Principal Name (UPN) where team members will send their status update requests.
   f. In the **send.replyto =** line, specify an email address for team members to respond to when they receive emails. If this field is left blank, the reply address will be the **send.email** address you specified above.
   g. In the **send.password =** line, specify the password for the email address or UPN you just specified.

Notes:

- If you do not specify a password now, the email application prompts you to specify one when it runs.
- You can also specify a password by running the following parameter when you run the 'run.bat' or 'run.sh' file:
  `-Dsend.password=YOUR_PASSWORD`
  where *Your_Password* is the password for your status email address.
  For example:
  In Windows: `./run.bat -Dsend.password=`*YOUR_PASSWORD*
  In UNIX: `./run.sh -Dsend.password=`*YOUR_PASSWORD*
- Oracle recommends using the option in the **config.properties** file and then moving that file to a secure location when you are finished modifying it.
- If you want to set up anonymous authentication for an SMTP server, comment this field out.

6) In the **Incoming Mail (IMAP Settings)** section, locate and specify the following:
   a. In the **imap.host =** line, specify the IMAP protocol host to read emails.
   b. In the **imap.port =** line, specify the IMAP port number.
   c. In the **imap.ssl=** line, specify **true** to use SSL or **false** if you will not use SSL.

Note: Oracle recommends that you always use SSL in a production environment for secure communications.

   d. In the **imap.username =** line, specify the IMAP user name (which will be your email address) or User Principal Name (UPN).
   e. In the **imap.password =** line, specify the password for the user name you just specified.

Notes:

- If you do not specify a password now, the email application will ask you to specify one when it runs.
- You can also specify a password by running the following parameter when you run the 'run.bat' or 'run.sh' file:
  -Dimap.password=*YOUR_PASSWORD*
  where *Your_Password* is the password for your status email address.
  For example:
  In Windows: ./run.bat -Dimap.password=*YOUR_PASSWORD*
  In UNIX: ./run.sh -Dimap.password=*YOUR_PASSWORD*
- Oracle recommends using the option in the **config.properties** file and then moving that file to a secure location when you are finished modifying it.
- If you want to setup anonymous authentication for an SMTP server, comment this field out.

f. In the **imap.search.folder =** line, specify the folder to use for processing incoming emails. For example:

```
imap.search.folder = inbox
```

Note: The email application will use this folder to search for incoming mail. Oracle recommends you use the inbox for this folder. If you select another folder, you must ensure that all emails get filtered there, or the email application will not be able to detect the messages.

7) In the **IMAP Folder configuration** section, locate and specify the following:

a. In the **imap.success.folder =** line, specify the folder where messages that process successfully will go. For example:

```
imap.success.folder = P6Success
```

Note: The email application will automatically create this folder if you do not create it now.

b. In the **imap.failure.folder =** line, specify the folder where messages that failed will go. For example:

```
imap.failure.folder = P6Fail
```

Note: The email application will automatically create this folder if you do not create it now.

c. In the **imap.temp.folder =** line, specify the folder where messages that are being processed will go. For example:

```
imap.temp.folder = P6Temp
```

Note: The email application will automatically create this folder if you do

not create it now.

8) In the **Task update options** section, locate and specify the following:
   a. In the **reply.label.cleanup** field, enter true if you want to remove HTML tags attached to the task field labels. Enter false if you don't want to remove the tags.
   b. In the **reply.label.tag.search** field, enter the regular expression to remove unexpected HTML tags during reply message parsing.

      Note: See information on "regular expression" for more details on this field. For example, see https://developer.mozilla.org/en-US/docs/JavaScript/Guide/Regular_Expressions#Writing_a_Regular_Expression_Pattern.

   c. In the **update.debug** field, enter true if you want to output the contents of the email message as it is parsed for updates. Enter false if you don't want to output the contents of the email message as it is parsed for updates. You should only enter true when you are troubleshooting issues with updating tasks.
9) In the **Message Format options** section, locate and specify the following:
   a. In the **update.task.search.term =** line, specify the text that the email application should search for in the subject line of incoming messages. For example:
      ```
      update.task.search.term = Your Requested P6 Tasks
      ```
   b. In the **notify.update.task.search.term =** line, specify the text that the email application should search for in the subject line of incoming messages that originated from a Notify message. For example:
      ```
      update.task.search.term = Your P6 Tasks
      ```
10) If the EMAIL_HOME is on a different server from your P6 home, copy the BREBootstrap.xml from your P6 home to your EMAIL_HOME.

    If the EMAIL_HOME is on the same server as your P6 home, you will use the BREBootstrap.xml that is in your P6 home folder.
11) Run one of the following:
    - In Windows, launch the **run.bat** file.
    - In UNIX, launch the **run.sh** file.

    When you launch the run file, you may have to complete the following steps depending on how you configured your Email Statusing Service:
    a. If the config.properties file and the run file are in different folders, you will need to specify the config.properties location with the -Dconfig.file parameter.
       - In Windows (add a space between run.bat and -Dconfig):
         ```
         run.bat
         -Dconfig.file=C:\home\auser\somelocation\config.properties
         ```
       - In UNIX (add a space between run.sh and -Dconfig):
         ```
         ./run.sh
         -Dconfig.file=/home/auser/somelocation/config.properties
         ```
    b. If you didn't specify the **send.password=** or **imap.password=**, you can specify them now. If you do not specify them now, the email application will prompt you to do so when it runs.

- In Windows:
  `run.bat -Dsend.password=`*YOUR_PASSWORD*
- In UNIX:
  `./run.sh -Dsend.password=`*YOUR_PASSWORD*
- In Windows:
  `run.bat -Dimap.password=`*YOUR_PASSWORD*
- In UNIX:
  `./run.sh -Dimap.password=`*YOUR_PASSWORD*

where *Your_Password* is the password for your status email address

c. If your bootstrap file contains more than one database, you need to clarify which database you are using when you launch the run file.
   - In Windows:
     `run.bat -Ddatabase.instance=`*db_id*
     where *db_id* is your database instance (for example, -Ddatabase.instance=2).
   - In UNIX:
     `./run.sh -Ddatabase.instance=`*db_id*
     where *db_id* is your database instance (for example, -Ddatabase.instance=2).

Once the run file finishes, you can verify that the email status application works. See ***Verifying Email Statusing Service*** (on page 99).

Note: Anonymous SMTP authentication is supported.

Verifying Email Statusing Service

Once you have installed the email status application, you can send an email to verify that the server is setup properly.

To verify your Email Statusing Service setup:

1) Enter an email address that P6 recognizes in the 'From' line.
2) Enter the email address you specified in ***Configuring Email Statusing Service for P6*** (on page 94) in the 'To' line.
3) Enter **Ping** in the subject line.
4) Send the message.

If the message is successful, you will receive a message containing the status of the email service. The message will tell you how many users have a blank email address in the database.

If the message failed, you will not receive a message. The failed message will appear in the failure folder that you specified in the **config.properties** file. See ***Configuring Email Statusing Service for P6*** (on page 94).

Configuring IIS 8.5 for P6 Team Member

To ensure that your instance of P6 Team Member works correctly with IIS 8.5, you will need to update your `web.config` file; otherwise, you might experience an error when attempting to select an option from the My Tasks drop-down list.

To configure IIS 8.5 for P6 Team Member:

1) Navigate to *%SystemDrive%*`\inetpub\wwwroot`.
2) Open **web.config**.
3) Add `<modules><remove name="WebDAVModule" /></modules>` to the inside of the `<system.webServer></system.webServer>` tag.
4) Add `<remove name="WebDAV" />` beneath the `<handlers></handlers>` tag, which can be found inside the `<system.webServer></system.webServer>` tag.
5) Save the file and the close it.

P6 Integration API Setup Tasks for On-Premises

Complete the following task to finish enabling P6 Integration API.

In This Section

Changing Database Configuration Settings for P6 Integration API

The P6 Integration API Database Configuration wizard lets you create a new configuration or switch to a different configuration than the one specified during the P6 Integration API installation.

The database you connect to during the installation stores one or more P6 Integration API configurations. Each configuration specifies a set of configurable parameters that determine how the P6 Integration API operates. If no configuration exists in the database the first time you install the P6 Integration API, you must create a new configuration. For subsequent configurations, you can select an existing configuration or create a new one. After configuration, you can use the Database Configuration wizard to select a different P6 Integration API configuration or create a new one.

> **Note**: After selecting a different P6 Integration API configuration or creating a new configuration, you must stop and restart the server for the changes to take effect.

Starting the Database Configuration wizard

- On Windows, go to the <API_INSTALL_HOME> directory and run the **dbconfig.cmd** script. Depending on your installation, the home directory may be: **C:\P6EPPM_1\api**.
- On UNIX, change to the <API_INSTALL_HOME> directory and run the **dbconfig.sh** script. Depending on your installation, the home directory may be: **/usr/P6EPPM_1/api**.

Enabling the Java Security Manager

The Java security manager enables programmers to establish a custom security policy for their Java applications.

Unless you enable the security manager before you start the P6 Integration API server, the security manager is disabled. To enable/disable the security manager, edit the P6 Integration API server's startup script with a text editor and uncomment or comment the appropriate command:

1) For Windows, edit the **startAppServer.cmd** file.

For Linux, edit the **startAppServer.sh** file.

2) Uncomment or comment one of the following:

In Windows:

SET ENABLE_JAVA_SECURITY_MANAGER=-Djava.security.manager

Linux:

ENABLE_JAVA_SECURITY_MANAGER=-Djava.security.manager

> **Note**: The P6 Integration API server can use different policy files for different application/web servers.

Configuring Integration API Server Settings

To configure P6 Integration API and P6 to work together, you will need to set the P6 Integration API settings in the Primavera P6 Administrator.

> **Note**: For more information on the Primavera P6 Administrator see ***Primavera P6 Administrator Setup Tasks*** (on page 9).

To set your Integration API server settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Integration API Server**.
4) In the **Session Timeout** field, enter the number of minutes when an idle connection will end.

   The default value is 120.

   Enter a value between 1 and 24d.
5) In the Security Authenticate **Mode** field, select one of the following modes:

   Username Token Profile

   SAML Token Profile

   The default value is Username Token Profile.
6) To configure RMI settings:
   a. Select **Enable** to enable the RMI server. You need to enable the RMI server only if you are using P6 Integration API.
   b. P6 Integration API supports three modes. Depending on the mode you are using, do one of the following:
      - Select **Enable Compression** to enable compression service mode.
      - Select **Enable SSL** to enable SSL service mode.
      - Select **Enable Standard Service** to enable Standard service mode.
   c. In the **Registry Port** field, enter the port for the RMI Registry. The default value is 9099.
   d. Depending on which mode you enable, set the corresponding port for that mode:
      - In the **Compression Service Port** field, enter the port to use for Compression service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

The default value is 0.

- In the **SSL Service Port** field, enter the port to use for SSL service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

  The default value is 0.

- In the **Standard Service Port** field, enter the port to use for Standard service mode. A setting of 0 indicates that any available port will be used. If the server will be accessed across a firewall, you must set this to a specific port.

  The default value is 0.

7) In the **File Location** field, enter the full path to the Keystore file.
8) In the **Keystore Password** field enter the Keystore password.

Configuring P6 Integration API Authentication

Because one P6 Integration API server instance can control more than one database, in addition to specifying an authentication mode for a database through the Authentication tab of the Primavera P6 Administrator, you can use an administrative configuration setting to specify the overall mode you want to use for the P6 Integration API server. The P6 Integration API uses a single P6 Professional configuration setting, Authentication.Mode, to support authentication selection. For LDAP authentication with secure communication (SSL) between the P6 Integration API server and the LDAP server, two additional configuration settings are required.

Use the Primavera P6 Administrator to specify these configuration settings.

> **Note**: A P6 Integration API configuration might include database instances that are not set to the same authentication mode as the P6 Integration API server. If a user connects and requests a database that is set to a different authentication mode than the P6 Integration API server, an error message displays. The user must select a database that matches the authentication mode set for the P6 Integration API server.

P6 EPPM Web Services Setup Tasks

Complete the following tasks to finish enabling P6 EPPM Web Services.

In This Section

Changing Database Configuration Settings for P6 EPPM Web Services

The Primavera Database Configuration wizard lets you create a new configuration or switch to a different configuration than the one specified during P6 EPPM Web Services installation.

The database you connect to during the installation stores one or more P6 EPPM Web Services configurations. Each configuration specifies a set of configurable parameters that determine how P6 EPPM Web Services operates. The first time you install P6 EPPM Web Services, if no configuration exists in the database, you must create a new configuration. For subsequent installs, you can select an existing configuration or create a new one. After configuration, you can use the Database Configuration wizard to select a different P6 EPPM Web Services configuration or create a new one.

> **Note**: After selecting a different P6 EPPM Web Services configuration or creating a new configuration, you must stop and restart the server for the changes to take effect.

Starting the Database Configuration wizard

- On Windows, go to the <WS_INSTALL_HOME>/bin directory and run the **dbconfig.cmd** script. Depending on your installation, the home directory may be: **C:\P6EPPM_1\ws\bin**.
- On UNIX, change to the <WS_INSTALL_HOME>/bin directory and run the **dbconfig.sh** script. Depending on your installation, the home directory may be: **/usr/P6EPPM_1/ws/bin**.

About Configuring P6 EPPM Web Services in the Primavera P6 Administrator

One P6 EPPM Web Services server instance can control more than one database and you can specify an authentication mode for a database through the Authentication Configuration wizard.

You can use the Primavera P6 Administrator to set the authentication mode, token profiles and message protection settings. If you use SAML for P6 EPPM Web Services, you must use Single Sign-On or LDAP authentication for P6 EPPM. You must configure additional settings for LDAP authentication with secure communication (SSL) between the P6 EPPM Web Services server and the LDAP server.

To configure P6 EPPM Web Services and P6 to work together, you will need to set the P6 EPPM Web Services settings in the Primavera P6 Administrator.

Note:

- A P6 EPPM Web Services configuration might include database instances that are not set to the same authentication mode as the P6 EPPM Web Services server. If a user connects and requests a database that is set to a different authentication mode than the P6 EPPM Web Services server, an error message displays. The user must select a database that matches the authentication mode set for the P6 EPPM Web Services server.
- For more information on the Primavera P6 Administrator see ***Primavera P6 Administrator Setup Tasks*** (on page 9).
- See the *P6 EPPM Web Services Programming Guide* for more information.

Configuring Authentication Mode for P6 EPPM Web Services

To set your authentication mode:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Authentication**.
4) In the **Mode** drop-down menu, select the method clients use for authentication. The default value is Username Token Profile. You can select one of the following:
   - **Username Token Profile**: Oracle recommends using this authentication mode. It defines how a web service client application can supply a user name and an optional password in the message request that the web service server can use to authenticate the requester's identity.
   - **SAML Token Profile**: Security Assertion Markup Language (SAML) defines an XML-based mechanism for exchanging messages that contain security information in the form of assertions.
   - **Cookies**: This option requires you to call the Authentication service Login operation to establish a session and obtain a cookie before you can use any other P6 web service.
   - **OWSM**: This option lets you use Oracle Web Services Manager to manage P6 EPPM Web Services security policies and to monitor authentication and authorization attempts.

Notes:

- See the *P6 EPPM Web Services Programming Guide* for more information.
- Changes to this setting require you to restart the P6 server.

Configuring Username Token Profile Settings for P6 EPPM Web Services

To set your Username Token Profile settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.

3) In the sidebar select **Web Services/Security/Authentication/Username Token Profile/Nonce**.
   a. Select **Require Nonce** to enable nonce.

      Nonce is a token that contains a random value and is used to prevent attacks.
   b. In the **Nonce Cache Timeout** field, enter the value for the Nonce cache timeout. The value specified indicates how long the nonce remains cached before it is deleted.

      The default value is 10m.

      Enter a value between 5m and 24d.
   c. Select **Require Created** to enable the Username token timestamp.

      Requiring a Created element allows the server to determine whether the difference between two timestamps falls within an allowable window of time and can then reject any messages that exceed the window.
   d. In the **Timeout** field, enter the value for the Created timestamp timeout. You can specify a minimum of 5m.

      The default value is 10m.

      Enter a value between 5m and 24d.

Configuring SAML Token Profile Settings for P6 EPPM Web Services

To set your SAML Token Profile settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Authentication/SAML Token Profile.**
   a. In the Require Signed SAML Token field, select true to require signed SAML tokens or false to require unsigned SAML tokens.
   b. In the **SAML Version** field, select one of the following:
      - **1.1**
      - **2.0**
      - **Both**
4) To configure **SAML Tokens** settings:
   a. Select **Disable Timeout** to use **IssueInstant Timeout** and **AuthenticationInstant Timeout** fields.
   b. In the **Issuer** field, enter the valid issuer for the SAML token. Use a space to separate multiple valid issuers. For example,

      http://your.saml.issuer.com
   c. In the **IssueInstant Timeout** field, enter the value for the IssueInstant timeout. The value specified indicates the maximum time allowed between the time the token is issued and the time the token is received by the web service.

      The default value is 5m.

      Enter a value between 5m and 24d.

d. In the **AuthenticationInstant Timeout** field, enter the value for the AuthenticationIssueInstant timeout. The value specified indicates the maximum time allowed between the time the token is issued, the time the user is authenticated, and the time the token is received by the web service.

The default value is 5m.

Enter a value between 5m and 24d.

5) To configure **Signed SAML Tokens** settings:

a. In the **KeyStore Type** list, select the KeyStore type.

The default value is JKS. JCEKS is also supported.

b. In the **File Location** field, enter the absolute path to the keystore file. This file must exist on the local filesystem. For example,

`c:\keystore\keystore.jks`

c. In the **KeyStore Password** field, enter keystore password.

d. In the **Certificate Alias** field, enter alias for the client certificate containing the public key.

The default value is alias.

e. In the **Private Key Alias** field, enter the alias for the private key.

The default value is privatekeyalias.

f. In the **Private Key Password** field, enter the password for the private key alias.

Configuring Message Protection Settings for P6 EPPM Web Services

To set your message protection settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Security/Message Protection.**

a. Select **Require Timestamp** if incoming SOAP messages must contain the WS-Security Timestamp.

b. Select **Require Digital Signatures for Incoming Messages** to require that incoming SOAP messages are signed and conform to Web Service Security 1.1 standards.

> **Note**: To access Web Services, you must configure all Web Services settings to get encryption and digital signatures to work. If you do not want to use encryption or digital signatures, you must set this setting and the Require Encryption setting to false.

c. Select **Require Encryption for Incoming Messages** to require incoming SOAP messages are encrypted and conform to Web Service Security 1.1 standards. When this setting is selected, at least one element in each P6 EPPM Web Services request message must be encrypted.

> **Note**:
>
> - To access Web Services, you must configure all Web Services settings to get encryption and digital signatures to work. If you do not want to use encryption or digital signatures, you must set this setting

and the Require Encryption setting to false.

- When the Encrypt Response setting and the Require Encryption for Incoming Messages setting are both set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
- When the Encrypt Response setting is Encrypt only if request is encrypted and Require Encryption for Incoming Messages setting is set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
- When the Require Encryption for Incoming Messages setting is set to false, both encrypted and un-encrypted incoming messages are accepted. This setting provides flexible interoperability with multiple Web Services clients simultaneously, without compromising security.

d. In the **Encrypt Response** list, select the encryption response options for outgoing messages. This setting governs when responses will be returned as encrypted.

   The default value is Encrypt only if request is encrypted.

e. In the **Keystore Type** list, select the KeyStore type.

   The default value is JKS.

f. In the **File Location** field, enter the absolute path to the keystore file. This file must exist on the local filesystem. For example,

   `c:\keystore\keystore.jks`

g. In the **Keystore Password** field, enter KeyStore password.

h. In the **Private Key Alias** field, enter alias for the private key in KeyStore.

   The default value is alias.

i. In the **Private Key Password** field, enter password for the private key.

j. In the **Encrypt Response** field, select whether to encrypt outgoing messages. You can use this setting only when you enable encryption for incoming messages.

   - **Note**: When the Encrypt Response setting and the Require Encryption for Incoming Messages setting are both set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.
   - When the Encrypt Response setting is Encrypt only if request is encrypted and Require Encryption for Incoming Messages setting is set to true, the server encrypts everything inside of the body element of P6 Web Services response messages.

   When the Require Encryption for Incoming Messages setting is set to false, both encrypted and un-encrypted incoming messages are accepted. This setting provides flexible interoperability with multiple Web Services clients simultaneously, without compromising security.

Configuring Compression Settings for P6 EPPM Web Services

To set your compression settings:

1) Open the Primavera P6 Administrator.
2) In the **Configurations** drop-down list, select your configuration.
3) In the sidebar select **Web Services/Compression.**

   Set the minimum size for response compression. responses smaller than this will not be compressed to gzip format.

   Set a value between Between 0 and 2147483647 bytes, the default is 400.

Adding Additional Policies to Oracle Web Services Manager

By default, the P6 EPPM Configuration Wizard deploys P6 EPPM Web Services with the `oracle/wss_username_token_server_policy` OWSM policy. This policy does not contain message protection and encryption.

To add a new policy to OWSM for message protection and encryption:

1) Create a Java Keystore.

   For information about Java keystores and instructions to create one, refer to the *SAML Message Protection Use Case* chapter of the *Oracle Fusion Middleware Securing Web Services and Managing Policies with Oracle Web Services Manager* guide on Oracle Technical Network.
2) Configure OWSM to use the JKS Keystore.

   For information about Java keystores and instructions to create one, refer to the *Managing OWSM Domain Configuration* chapter of the *Oracle Fusion Middleware Securing Web Services and Managing Policies with Oracle Web Services Manager* guide on Oracle Technical Network.
3) Log in to WebLogic Enterprise Manager using the following URL:

   http://<Host_Name>:<Port>/em
4) Navigate to **WebLogic Domains** in the **Target Navigation** directory and right-click **owsm**.
5) In the **owsm** menu, select **Web Services** and then click **WSM Policy Sets**.
6) Select **P6WSSOAP** and then click **Edit**.

   Note: Edit becomes available when a policy set is selected.
7) Add additional policies to the policy set by completing the following:
   a. On the **Edit Policy Set: Enter General Information** page, click **Next**.
   b. On the **Edit Policy Set: Enter Resource Scope** page, click **Next**.
   c. On the **Edit Policy Set : Enter Constraint** page, click **Next**.
   d. On the **Edit Policy Set: Add Policy References** page, attach one of the following policies from the **Available Policies** table and then click **Next:**

   - **oracle/wss11_username_token_with_message_protection_server_policy**
   - **oracle/wss11_saml20_token_with_message_protection_server_policy OWSM**

   Note: Refer to OWSM documentation for descriptions of each policy.

   a. On the **Edit Policy Set: Summary** page, click **Save**.

8) Navigate to **P6WebServices** in the **Target Navigation** directory.
9) Click **Apply JRF Template**.
10) Restart the P6 server.

Troubleshooting for P6 EPPM

The following sections detail solutions for problems you may encounter with P6 EPPM.

In This Section

Troubleshooting for Connecting the Content Repository

An enhancement was made with P6 R8.4 to store documents in folders using the short name of the project instead of the database object ID. The P6 users' documents will now be stored in a folder called 'P6Users' instead of 'Users'. If you were using a previous version of the content repository P6 but did not run the migration utility provided in the media pack when you upgraded your environment, the content repository will not work.

To fix this issue:

1) Shutdown the P6 server.
2) Go to the **P6EPPM_Home/p6** folder.
3) Run **migrationtool.cmd** or **migrationtool.sh** (based on your operating system).
4) After the utility finishes:
   a. Go to the **P6EPPM_Home/p6/webaccesslogs** folder and ensure it contains **Document-migration.html**.
   b. Open the **Document-migration.html** file and ensure all the folder names changed successfully. Ensure nothing failed.
   c. If anything failed, log in to the content repository and manually move the documents that failed to move from the older document folders to the new document folders.

      Project Documents example:

      Assume there is a Project called ‘Business Development Processes' whose Database ID is ‘4321' and Project ID ‘BDP001'. In the content repository, you would be able to see two folders: one with the name ‘4321' and one with the name ‘BDP001'.

      1. Open the **4321** folder and copy all the documents in this folder.
      2. Open folder **BDP001** and paste all the documents in this folder.
      3. After you finish copying the documents, you can safely delete the **4321** folder from the content repository.

      User Documents example:

      If you log in to the content repository and navigate to the Project Document home, you would see only two folders: Projects and P6Users . If you see a third folder named Users, follow these steps:

      4. Open the **P6Users** folder and make a note of the folder names.
      5. Open the **Users** folder and check if the above folder names are present.

6. If a folder name is not present in the **Users** folder, copy that missing folder from **P6Users** to **Users**. Repeat this step for all the missing folders.
7. If a folder name is present in the **Users** folder, manually move the documents from that folder in **P6Users** to the same folder in **Users** folder. Repeat this step for all the matching folders.

d. Delete the **P6Users** folder.

5) Rename the **Users** folder to **P6Users** in the content repository.
6) Start the P6 server and ensure you can see all the documents.

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