Oracle Enterprise Manager for Primavera Configuration Guide for On-Premises

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Contents

About This Content

Audience

This guide is intended for system and network administrators.

Scope

This guide contains the necessary information and procedures to use the **Enterprise Manager for Oracle Construction and Engineering** plug-in for the following products:

- P6 EPPM
- Primavera Unifier
- Primavera Gateway
- Primavera Analytics

Topics include:

- Plug-in maintenance and management
- Viewing application-specific metrics

Using This Guide

If you are using this guide for the first time and haven't installed Oracle Enterprise Manager before, consider the following workflow:

1. Complete all of the prerequisite steps that are described in Prerequisites for Using Oracle Enterprise Manager with Primavera Applications.

2. Deploy your plug-in using the information in Managing Plug-in Deployments.

After you have Oracle Enterprise Manager installed and your plug-ins deployed, you can view the metrics for your Primavera applications by using the steps described in Viewing Target Metrics.

Conventions

The following text conventions are used in this document.

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Prerequisites for Using Oracle Enterprise Manager with Primavera Applications

The following prerequisites must be completed before you can use the **Oracle Enterprise Manager for Oracle Construction and Engineering** plug-in.

Installing and Configuring Oracle Enterprise Manager

To install and configure Oracle Enterprise Manager, refer to the following 13c version documents:

- *Cloud Control Basic Installation Guide*
- *Cloud Control Advanced Installation and Configuration Guide*

Installing Primavera Applications

Install the most recent version of your Primavera applications.

For more information about installing each of the Primavera products, refer to the installation and configuration documents for the respective products on Oracle Help Center.

Enabling Monitoring for Primavera Applications

Unmanaged hosts are hosts that do not have an agent. If you do not have an agent on a host, you cannot monitor your Primavera applications on that host. Therefore, to enable Oracle Enterprise Manager to monitor your Primavera applications, you must first convert unmanaged hosts to managed hosts by installing a management agent and then adding that host as a target in Oracle Enterprise Manager. Targets are entities such as host machines, databases, and Fusion Middleware components that can be managed and monitored in Cloud Control. Managed targets are entities that are actively being monitored and managed by Oracle Enterprise Manager.

For more information about adding agents to unmanaged hosts and creating targets, see the *Enterprise Manager Cloud Control Administrator's Guide*.

Setting Arguments for Primavera Applications in WebLogic

To enable your P6 EPPM applications to publish target metrics, you must first set the JVM for your managed servers to allow remote Java Management Extension (JMX) connections.

This step is not required for Primavera Unifier.

To set the JVM:

1. Launch the WebLogic **Administration Console**.

> ⓘ **Note**
>
> You can open the Administration Console via a web browser using this address: `http://serverIP:listenport/console`. The default `listenport` is 7001.

2. In the **Welcome** window, log in using the user name and password you created when you created your WebLogic domain.

3. In the **Change Center** pane of the Administration Console, click **Lock & Edit**.

4. In the **Domain Structure** pane, expand **Environment** and click **Servers**.

5. In the **Summary of Servers** pane, in the **Configuration** tab, click a managed server name.

6. In the **Settings for <managed server name>** pane, select the **Server Start** tab.

7. Locate the **Arguments** field and add the following to the end of the arguments already in that field (as all one line with a space before the dash):

   • If you are configuring WebLogic for Primavera Applications:

8. Click **Save**.

9. In the **Change Center** pane, click **Activate Changes**.

10. Restart your managed server:

    a. In the **Domain Structure** pane, expand **Environment** and click **Servers**.

    b. In the **Summary of Servers** pane, select the **Control** tab.

    c. In the server table, select your managed server.

    d. Click **Shutdown** and then select an option:

       • Select **When work completes** to gracefully shut down the server.

       • Select **Force Shutdown Now** to stop the server immediately.

    e. In the **Server Life Cycle Assistant** pane, click **Yes** to complete the shutdown.

    f. In the server table, select your managed server.

    g. Click **Start**.

    h. In the **Server Life Cycle Assistant** pane, click **Yes**.

    i. In the **Summary of Servers** pane, click the **Start Refresh** icon in the middle of the pane to see when the **State** column says RUNNING.

11. Repeat these steps for each managed server.

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Managing Plug-in Deployments

Managing plug-in deployments refers to the tasks of downloading, deploying, upgrading, and undeploying your Oracle Enterprise Manager plug-in.

To deploy the **Enterprise Manager for Oracle Construction and Engineering** plug-in, refer to the following topics:

- [Downloading the Plug-in](#)
- [Deploying the Plug-in](#)
- [Upgrading the Plug-in](#)
- [Undeploying the Plug-in](#)

Downloading the Plug-in

You can download **Oracle Enterprise Manager for Construction and Engineering** in online or offline mode.

Online mode refers to an environment where you have Internet connectivity, and can download the plug-in directly through Enterprise Manager from My Oracle Support.

Offline mode refers to an environment where you do not have Internet connectivity, or where the plug-in is not available from My Oracle Support.

See [Managing Plug-ins](#) in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for details on how to download the plug-in in either mode.

Deploying the Plug-in

You can deploy plug-ins to an Oracle Management Service instance using the Enterprise Manager Cloud Control console or using the Enterprise Manager Command Line Interface.

Oracle Enterprise Manager has three components that the plug-in must be deployed to: an Oracle Management Service instance, an Agent, and a Target.

You must first deploy the plug-in to the Oracle Management Service instance that manages your Primavera application servers. Then, deploy the plug-in to an Oracle Management Agent on the server you want to monitor and create a Target for each application instance. For more information on creating Targets, see [Creating Primavera Targets](#).

See [Managing Plug-ins](#) in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for instructions on how to deploy plug-ins.

Upgrading the Plug-in

Oracle periodically provides new functionality and updates for existing features in plug-ins. The Self Update page allows you to receive notifications and view, download, and apply updates for

plug-ins. While the updates on the Self Update page are retrieved automatically, a manual check can be made at any time.

See [Updating Cloud Control](#) in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for instructions on how to deploy plug-ins.

Undeploying the Plug-in

See [Managing Plug-ins](#) in the *Oracle Enterprise Manager Cloud Control Administrator's Guide* for instructions on how to undeploy plug-ins.

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Creating Primavera Targets

When configuring Oracle Enterprise Manager for your Primavera applications, you can choose which applications you want to monitor.

Creating Primavera Targets Manually

To manually add Primavera targets in Oracle Enterprise Manager:

1. Open the **Setup** menu

2. Select **Add Target** and then select **Add Targets Manually**.

3. On the **Add Targets Manually** page, select **Add Targets Declaratively**.

4. Open the **Select Hosts** dialog box by clicking the magnifying glass near the **Host** field.

5. In the **Select Hosts** dialog box, **Select** the host that has the application you want to monitor.

6. In the **Target Type** box, enter the following, depending on the application you are adding:

   For P6 EPPM, enter **Oracle Primavera P6 EPPM**.

   For Primavera Gateway, enter **Oracle Primavera Gateway**.

   For Primavera Analytics, enter **Oracle Primavera Analytics**.

   For Primavera Unifier, enter **Oracle Primavera Unifier**.

   For Primavera Unifier Analytics, enter **Oracle Primavera Analytics**.

7. Select **Add**.

8. On the next page, enter the following information:

   a. In the **Target Name** field, enter a unique name for the target.

   b. In the **Admin Port Number** field, enter the JMX/RMI port for the application.

   c. In the **Check Basic Health OHS URL** field, enter the basic health URL for an Oracle HTTP Server.

   d. In the **Check Basic Health URL** field, enter the check basic health URL.

   e. In the **Database ID** field, the numeric database ID of the database instance in the Primavera Configuration.

   f. In the **Machine Name** field, enter the machine name of the server.

   > ⓘ **Note**
   >
   > To configure Primavera Unifier, you must enter the **Username** and **Password** of the Unifier WebLogic administrator account.

9. Select **OK**.

---

10. Repeat steps 3 through 9 for each application you want to monitor.

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Viewing Target Metrics

When evaluating metrics for your Primavera applications, you will use the **All Targets** page. The **All Targets** page contains a list of all the targets available on your managed hosts, regardless of target type.

> ### ⓘ Note
>
> If you are an administrator with Super Administrator privileges, the All Targets page provides a comprehensive list of all the targets associated with this installation of Oracle Enterprise Manager. If your administrator account does not have "super user" privileges, the list of targets you see may be limited to a subset of the targets on your site. Similarly, you may or not have the privilege to add or configure targets on this page, depending upon the privileges or roles assigned to your account.

The **All Targets** page can be a good starting point when you are monitoring your Oracle environment and Primavera applications; it shows you the complete list of targets you are responsible for managing. For example, when you open the **All Targets** page, you should check the availability of each target by scanning the **Target Status** column.

For information about viewing metrics in Oracle Enterprise Manager 13c, see Viewing Target Metrics in Oracle Enterprise Manager.

For information about the metrics for each Primavera application, see Primavera Metrics Reference.

Viewing Target Metrics in Oracle Enterprise Manager

To view target metrics for your Primavera applications in Oracle Enterprise Manager:

1. From the **Target** menu, on the **Welcome to Enterprise Manager Cloud Control** page or your default **Home** page, select **All Targets**.

2. In the **Refine Search** directory, on the **All Targets** page, expand **Target Type** and **Applications**.

3. Select one of the following:

    • **Oracle Primavera P6 EPPM**

    • **Oracle Primavera Unifier**

4. In the **Target Name** field, on the **All Targets** page, select a target. After you select a target, you will be able to view the metrics for the specified application at that target.

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Primavera Metrics Reference

Because of the size, complexity, and criticality of today's enterprise IT operations, the challenge for IT professionals is to be able to maintain high levels of component availability and performance for both applications and all components that make up the application's technology stack. Monitoring the performance of these components and quickly correcting problems before they can impact business operations is crucial. Oracle Enterprise Manager provides comprehensive, flexible, easy-to-use monitoring functionality that supports the timely detection and notification of impending IT problems across your enterprise.

By default, Oracle Enterprise Manager comes with a comprehensive set of performance and health metrics that allows monitoring of key components in your environment, such as applications, application servers, databases, as well as the back-end components on which they rely (for example, hosts, operating systems, storage, and so on). In addition to these default metrics, the plug-in allow you to view metrics that are specific to P6 EPPM and Primavera Unifier. Metrics give you the information you need to evaluate whether your application infrastructure is meeting the demands of the application users.

The following sections contain a descriptions of all the metrics associated with P6 EPPM and Primavera Unifier.

- [P6 EPPM Metrics](#)
- [Primavera Unifier Metrics](#)
- [Primavera Analytics Metrics](#)
- [Primavera Gateway Metrics](#)

P6 EPPM Metrics

The following P6 EPPM metric data can be displayed in columns of the Enterprise Manager Cloud Control:

P6 Services

These following services correspond to the services you set in the P6 Administrator application:

- All Service Summary
- Apply Actuals
- Leveler
- PX
- Recalc Cost
- Schedule Check
- Scheduler
- Store Period Performance
- Summarizer

For each service, you can view the following metrics:

Metric	Descriptions
Average Execution Time (secs)	The average time (in seconds) the service took to run.
Number Currently Running on Target	The number jobs currently running on the node.
Number of Jobs Currently Running System Wide	The number of jobs currently running on all nodes. The job information displayed represents the status for all job service nodes (based on data in the database).
Number of Jobs Executed In Last Hour	The number of jobs that finished in the last hour.
Number of Job Executions	The number of times the job has run.
Number of Jobs Failed In Last Hour	The number of times the job failed in the last hour.
Number of Jobs Pending System Wide	The number of jobs waiting to run on all nodes. The job information displayed represents the status for all job service nodes (based on data in the database).

Additionally, the All Service Summary service includes the following metrics:

- **Longest Running Job Type** The job that takes the most time to run.

- **Max Memory** The maximum memory given to the Java process (in kilobytes).

- **Shortest Running Job Type** The job that takes the least time to run.

- **Used Memory** The amount of memory that is being used (in kilobytes).

How to Analyze P6 Services

These P6 Services help you to determine if your targets are above capacity or close to it. They also give you the information you need to rework the services to get targets below capacity.

When the ratio of the **Number of Jobs Pending System Wide** and the **Number of Jobs Currently Running System Wide** continues to increase, your system might not be able to keep up with demand. You will need to determine which targets are at capacity and which are under-utilized.

- A target is at capacity if the memory it is using equals or is close to the amount of memory available. The **Average Execution Time** will also increase because the machine does not have enough resources to handle all the running jobs.

- A target is under-utilized if the memory it is using is significantly below the amount of memory available. The **Number Currently Running on Target** will be low.

When you have identified the targets at capacity and those that are under-utilized, you will need to balance the work among targets. To determine how to balance the system, use the values of your P6 Services, especially those indicating which jobs take the longest and which run most frequently.

If all of your machines are at capacity, you must add new targets.

Connection Pool

Each connection pool type has two sections: information and performance.

- Long-Running SQL Connection Pool Information

- Long-Running SQL Connection Pool Performance

- Regular SQL Connection Pool Information

- Regular SQL Connection Pool Performance

- Transactional SQL Connection Pool Information

- Transactional SQL Connection Pool Performance

The SQL Connection Pool types represent pools of database connections which are used for the following types of database access:

- **Long-Running SQL Connection Pool** Used for long running transactions, which includes all job services (scheduling, summarizing, apply actuals).

- **Regular SQL Connection Pool** Used for normal, short-lived transactions, typical of loading data in a web page.

- **Transactional SQL Connection Pool** Used for transactional operations that usually involve inserting or updating more than 2 tables, and includes all P6 Integration API operations that involve updating data. Used for long delete operations within P6, including deleting projects and EPS objects.

The information section will display your settings as you have set them in the P6 Administrator application. The performance section will tell you how long it takes each service to run.

The performance sections will display the following information:

- **Average Lease Time (secs)** The average time a user keeps a lease to a connection. If the average lease time over a period of a few days is close to the Maximum Lease Duration setting (for the particular connection pool type), then it may be necessary to increase the Maximum Lease Duration setting to avoid getting database connection lease timeout errors. The user will see these errors as a failure to load a web page or complete an API transaction. These errors will also be seen in the P6 Access logs.

- **Average Lease Wait Time (secs)** The average time a user must wait for a lease to a connection to become available. If the average lease wait time over a period of a few days is close to the Lease Request Wait Timeout setting (30 seconds is the default for all connection pool types), then it may be necessary to increase the Maximum Connections setting to allow more connections to be available for leasing on a busy system. Another possible cause of a Lease Request Wait Timeout is database connections are being held due to database locks; your database administrator should investigate these locks.

- **Average SQL Times (secs)** The average time to process SQL queries.

- **Connections Allocated** The number of connections available to users.

- **Connections In Use** The number of leased connections that are actively involved in database transactions. If the Connections in Use value is close to the Maximum Connections setting for more than 1 minute, you are exceeding the capacity of your database connection pool, and you are most likely overloading your server with requests. Another possible cause of server overload is database locking; your database administrator should investigate.

- **Connections Leased** The number of database connections that have been reserved by active user transactions.

- **Connections Recycled** The number of previously leased connections that have been forcibly returned to the connection pool due to lease timeout while the connection was not in use.

- **Connections Revoked** The number of previously leased connections that have been forcibly returned to the connection pool due to lease timeout during a database transaction.

- **Denied Lease Request** The number of database connection lease requests that were denied due to insufficient free database connections. If 'Denied Lease Request' count increases by more than one per day, your database administrator should investigate the database load as it indicates that user transactions are failing due to insufficient number of free database connections for an extended period of time (see Average Lease Wait Time above).

- **SQL Queries** the number of SQL queries processed.

- **Succeeded Lease Requests** The number of users who received a lease request.

- **Waiting for a Lease** The number of users waiting for a lease.

User Session Information

Historical Unique Total Logins: Total number of unique logins

This is the total historic count of unique P6 EPPM users that have logged into the system. This count will never exceed the total number of users in the user dictionary. For each unique user who has logged into the system, you will have only one entry to show they logged in. The purpose is to show how many users in your user dictionary have logged into the system.

Session Counts

These values refer to the number of P6 EPPM sessions currently logged in, based on module access permissions. For example, if a user logs in and has been assigned module access to both Resources and Projects, both the Projects session count and the Resources session count will increment by one. Oracle Enterprise Manager collects counts for the number of:

- API Sessions

- Concurrent Users

- Enterprise Reports Sessions

- Logged in Users

- P6 Analytics Sessions

- P6 Professional Sessions

- Portfolios Sessions

- Projects Sessions

- Resources Sessions

- Team Member Interfaces Sessions

- Team Member Sessions

- Timesheet Sessions

- Total User Sessions

- Web Services Sessions

Primavera Unifier Metrics

The following Primavera Unifier metric data can be displayed in columns of Oracle Enterprise Manager:

- **Login session count**: shows the number of users currently signed in.

- **Free database connection count**: shows the number of free database connections available.

- **Long locked database connection count**: shows the number of database connections that are locked for 60 seconds or longer.

- **Active background job count**: shows how many background jobs are currently running or the scheduled time already passed.

- **Active project count**: shows the number of unique projects accessed by users.
- **Active web service count**: shows the number of web services that are in processing state.
- **Other measurements**: displays web request information, including max request time, average request time, and how many requests for each.

Primavera Analytics Metrics

The following Primavera Analytics metric data can be displayed in columns of Oracle Enterprise Manager:

- **Number of Projects:** shows how many projects are in the Primavera Data Warehouse.
- **Number of Resources:** show the number of resources in Primavera Data Warehouse.
- **Number of Rows in Spread Fact tables:** shows the row count for all Fact tables.
- **Number of Rows in History tables:** shows the row count for all Historical tables.
- **Number of Rows in SCD tables:** shows the row count for all SCD tables.
- **Number of projects marked for Activity level:** shows the number of projects that have been assigned a history level in P6.
- **OBI queries > 1 min:** shows the number of times in which OBI queries take longer than one minute to process.
- **# of partitions:** shows the number of database partitions.

Primavera Gateway Metrics

The following Primavera Gateway metric data can be displayed in columns of Oracle Enterprise Manager.

- **Average job completion time:** shows the average completion time of all the jobs that were completed in the last 24 hours.
- **Average synchronization completion time:** shows the average completion time of synchronizations that have become complete in the last 24 hours.
- **Average synchronization completion time per pair of providers:** shows the average completion time of all the synchronizations that are executed between two providers in the last 24 hours.
- **Executed synchronization count:** shows the number of executed synchronizations in the last 24 hours.
- **Executed synchronization count per status of the execution:** shows the numbers of executed synchronization in last 24 hours for an execution status.
- **Active job count:** shows the number of currently active jobs.
- **Executed job count:** shows the number of executed jobs in last 24 hours.
- **Executed job count per status of the execution:** shows the numbers of executed jobs in last 24 hours for an execution status.
- **Login session count:** shows the number of users currently signed-in.
- **Free database connection count:** shows the number of free database connections available.

- **Long locked database connection count:** shows the number of database connections that are locked for 60 seconds or longer.

- **Active background job count:** shows how many background jobs are currently running.

- **Max job time:** shows the time of the longest job that has run last 24 hours.

- **Max synchronization time:** shows the time of the longest synchronization that has been executed in last 24 hours.

- **Scheduled synchronization count:** shows the current number of enabled, scheduled synchronizations.