

Oracle
Primavera
Analytics Installation and Configuration Guide for On-Premises

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About this Guide

Once you have completed the tasks in the *Primavera Data Warehouse Installation and Configuration Guide*, you can use this guide to install and configure Primavera Analytics. You must complete all of the required tasks in this guide before allowing your users to work with Primavera Analytics.

For On-Premises

Use either the PL/SQL-based or ODI-based StarETL process.

Note: The term, StarETL, when used generically, applies to PL/SQL as well as ODI.

About Primavera Analytics

Primavera Analytics uses the data stored in Primavera Data Warehouse to identify insights, patterns, and develop business intelligent analyses that help organizations reach their goals and objectives successfully.

Primavera Analytics consists of the following:

- ▶ A Repository Definition file (.rpd)

The Primavera Analytics Repository Definition file contains all of the information Oracle Business Intelligence needs to allow end users to create purposeful analysis based on data contained within Primavera Data Warehouse. The Repository Definition file contains information such as how Oracle Business Intelligence connects to Primavera Data Warehouse, how security is applied to each user, and how to join the Primavera Data Warehouse fact and dimension tables.

- ▶ A sample catalog containing sample analyses and dashboards

The Primavera Analytics sample catalog, also built upon Oracle Business Intelligence, contains over 400 pre-built analysis and dashboards, organized in a catalog structure, used to help facilitate the capabilities available combining P6 EPPM and/or Primavera Unifier with Oracle Business Intelligence.

- ▶ A sample Primavera Data Warehouse

The sample Primavera Data Warehouse can be restored and connected as the back-end for the sample Primavera Analytics catalog.

Primavera Analytics is built upon the industry leading Oracle Business Intelligence Suite. The data stored in Primavera Data Warehouse is analyzed and rendered as reports and dashboards, by connecting Primavera Data Warehouse to Oracle Business Intelligence (OBI) using Primavera Analytics.

About Primavera Data Warehouse

Primavera Data Warehouse is a data repository that collects and stores data from the following products:

- ▶ P6 EPPM
- ▶ Primavera Unifier

It contains a process called STARETL to *extract, transform, and load* (ETL) data from the above applications into Primavera Data Warehouse.

Primavera Data Warehouse separates the data into:

- ▶ Facts
Fact tables contain business facts or measures. For example: Actual Total Cost, Workflow Duration.
- ▶ Dimensions
Dimension tables contain descriptive attributes or fields. For example: Activity Name, Cost Breakdown Structure.

As Primavera Data Warehouse accumulates project and cash flow data, it provides baselines for tracking trends and for advanced business intelligence. It also provides key metrics on current data, which allow you to drill through root cause analysis.

To analyze and render the data stored in Primavera Data Warehouse as report and dashboards, connect Primavera Data Warehouse to Oracle Business Intelligence (OBI) using Primavera Analytics. For more details on installing OBI and Primavera Analytics, refer to the respective installation guides.

About Oracle Business Intelligence (OBI)

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

The OBI infrastructure consists of servers, programs, and tools used to build OBI applications. The OBI product includes an installer program that can install either the complete OBI suite or one or more OBI product components.

Once OBI is installed, apply and configure Primavera Analytics to your OBI deployment. Primavera Analytics provides the following default dashboards:

- ▶ Main
- ▶ Business Processes
- ▶ Cash Flow
- ▶ Cost Sheet
- ▶ Facilities and Real Estate
- ▶ Portfolio Analysis
- ▶ Project Earned Value
- ▶ Project Health

- ▶ Project Performance Measurement
- ▶ Resource Analysis
- ▶ Industry Samples
- ▶ Admin
- ▶ About: Primavera Analytics
- ▶ More

Note: Any customization done to the existing RPD or Catalog must be reapplied after the installation. It may be necessary to merge the RPD and Catalog with the new RPD and Catalog delivered with this version of Primavera Analytics.

For more information on OBI version supported for Primavera Analytics, see the *Tested Configurations* document.

For information about the Business Intelligence & Data Warehousing Technology Center, see <http://www.oracle.com/technetwork/topics/bi/index.html>.

For information about the Business Intelligence & Data Warehousing documentation, go to the following website, see <http://www.oracle.com/technetwork/middleware/bi-foundation/documentation/bi-dac-087220.html>.

For information about configuring an Impersonator User to be used with Single Sign-On for OBI, go to the following website, see http://download.oracle.com/docs/cd/E12096_01/books/AnyDeploy/AnyDeploySSO5.html.

About Oracle Data Integrator (ODI)

Primavera Data Warehouse accumulates data over time with each run of the STARETL process. The traditional ETL process is used to run STARETLs to extract, transform, and load (ETL) data into Primavera Data Warehouse.

Primavera Analytics gives you an alternative option to run STARETLs by using Oracle Data Integrator (ODI) to extract, transform, and load (ETL) data from the following data sources into Primavera Data Warehouse:

- ▶ P6 EPPM
- ▶ Unifier

Oracle Data Integrator (ODI) is a comprehensive data integration platform that covers all data integration requirements: from high-volume, high-performance batch loads to event-driven, trickle-feed integration processes and SOA-enabled data services. ODI allows for near real-time migration of data.

ODI allows for features not supported by the traditional ETL process such as:

- ▶ Real-time analytics
- ▶ Single project loading on-demand

Note: ODI is a separately licensed application.

Primavera Analytics Installation Roadmap

This roadmap serves as a guideline to understand where you are in the overall installation and configuration process. Each step in the roadmap refers to a specific chapter or section in this guide. For detailed instructions, review the specific chapter.

Note: Complete each step in the Primavera Data Warehouse roadmap before installing Primavera Analytics. For more details, refer to *Primavera Data Warehouse Installation and Configuration Roadmap*.

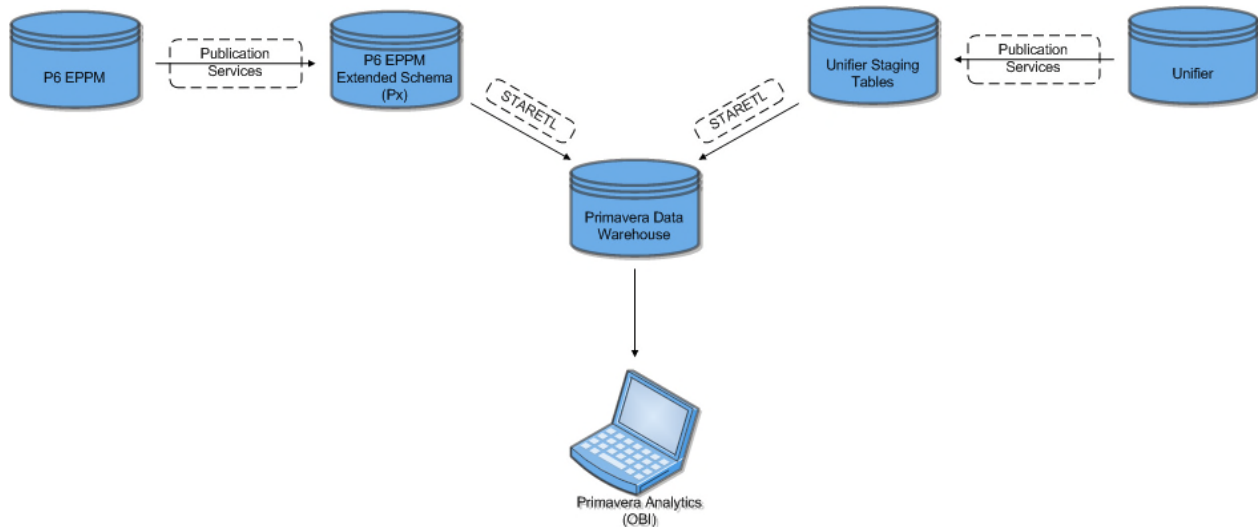
Use the following sequence as a roadmap to install and configure Primavera Analytics:

Review the *Primavera Analytics Planning and Sizing Guide* thoroughly to determine the appropriate size and scale for your particular implementation, disk storage needs, Oracle database instance setup evaluation.

- 1) Ensure you have the base environment ready for installing Primavera Analytics.
Complete the following prerequisites:
 - ▶ Install Oracle Business Intelligence (OBI).
 - ▶ (Optional) Install Oracle Data Integrator (ODI) if you want to run STARETLs using ODI instead of the traditional installation. For details on configuring ODI see **Configuring WebLogic for ODI** (on page 13).
 - ▶ Install Primavera Data Warehouse and ensure either the STARETL (PL/SQL) or STARETL (ODI) process is completed and data exists in Primavera Data Warehouse.
- 2) Configure Primavera Analytics with OBI.
 - a. Configure and deploy the Repository Definition File (.rpd).
For more details, see: **Configuring the Primavera Analytics Repository with OBI** (on page 18) and **Deploying the Repository Definition File (.rpd)** (on page 15)
 - b. Deploy the Primavera Analytics catalog.
For more details, see **Deploying the Primavera Analytics Catalog** (on page 16).
 - c. Update the tnsnames.ora file with the connection to the Primavera Data Warehouse.
For more details, see **Updating the tnsnames.ora File with OBI** (on page 17).
 - d. Provide access to OBI for Primavera Analytics users.
For more details, see **Adding Users for Primavera Analytics with OBI** (on page 23).
- 3) (Optional) **Importing Mobile Dashboards with OBI** (on page 25).
- 4) (Optional) **Deploying the D3 Library with OBI** (on page 26).
- 5) (Optional) **Setting up Oracle R for OBI** (on page 26).
- 6) (Optional) **Deploying the Custom Skin with OBI** (on page 27).
- 7) (Optional) **Importing Data Visualization Samples with OBI** (on page 29).

Primavera Data Warehouse and Primavera Analytics Data Flow

The following diagram depicts how data flows between P6 EPPM and Primavera Unifier into Primavera Data Warehouse. Depending on your organization's specific deployment, it is possible to have one or many P6 EPPM and/or Primavera Unifier databases loading data into a single Primavera Data Warehouse. This technique of having multiple databases populating a single Primavera Data Warehouse is known as multiple data source. The diagram below shows how data flows between P6 EPPM and Primavera Unifier into Primavera Data Warehouse:



For On-Premises

Use either the PL/SQL-based or ODI-based StarETL process.

Note: The term, StarETL, is used generically, unless it is specific to PL/SQL or ODI.

In the diagram, P6 EPPM contains a set of processes, called *Publication Services*, that are designed to move, manipulate and store data in specific database views, called the *P6 EPPM Extended Schema (Px)*. These views are used as the source of data for Primavera Data Warehouse. Once the data in P6 EPPM Extended Schema is up-to-date and ready to be moved into Primavera Data Warehouse, the STARETL process is run. After the STARETL process is complete, the data in Primavera Data Warehouse is up-to-date in the current and historical fact and dimension tables.

Primavera Unifier goes through a similar process. Data in the Primavera Unifier database is published (by a set of *Publication Services*) to the Primavera Unifier Staging tables. Once the data in the Primavera Unifier Staging tables is up-to-date, the STARETL process is run, manually through a command line interface, through a web-based interface, or through a scheduled routine. After the STARETL process is complete, the data in Primavera Data Warehouse is up-to-date in the current and historical fact and dimension tables.

On-premises installations have two alternatives to run the STARETL process, using PL/SQL or ODI.

- ▶ A STARETL process using PL/SQL is denoted as STARETL (PL/SQL).
- ▶ A STARETL process using ODI is denoted as STARETL (ODI).

The data is now available for access through applications such as Oracle Business Intelligence.

Installation Prerequisites

Before you begin the procedures in this document, install and configure the following applications:

- ▶ Oracle Business Intelligence (OBI)
For more details, see OBI 12c Installation Instructions.
- ▶ Primavera Data Warehouse
At least one run of the STARETL (PL/SQL) or STARETL (ODI) process must be completed to ensure data exists in Primavera Data Warehouse.
For more details, see the *Primavera Data Warehouse Installation and Configuration Guide*.
- ▶ If you choose to import the *Primavera Data Warehouse* schema Sample Schema, ensure you plan for a restore of the sample Primavera Data Warehouse schema also.
For more details, see **Importing the Primavera Data Warehouse Sample Schema** (on page 43).
- ▶ The OBI server must be able to connect to the server and instance of Primavera Data Warehouse.
For instructions on connecting OBI to Primavera Data Warehouse, see **Configuring Primavera Analytics with OBI** (on page 15).
- ▶ If you plan to use Oracle Data Integrator (ODI), install Oracle WebLogic.
For more details, see WebLogic installation documentation.
- ▶ If you plan to use Primavera Analytics for real-time analytics and single project loading on-demand, install and configure Oracle Data Integrator (ODI).
For more details, see **ODI installation documentation**
<https://docs.oracle.com/en/middleware/fusion-middleware/12.2.1.4/oding/index.html>
and **Configuring WebLogic for ODI** (on page 13).

See the *Tested Configurations* document for the supported versions of the applications listed above.

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Configuring WebLogic for ODI

To create and configure a WebLogic domain for ODI, complete the following tasks:

- ▶ **Creating and Configuring the ODI Java EE Agent** (on page 14)
- ▶ **Increasing the Connection Pool for *odiMasterRepository* and *odiWorkRepository*** (on page 14)

Creating and Configuring the ODI Java EE Agent

Create and configure a WebLogic domain for the Java EE Agent. This agent is used to run Oracle Data Integrator (ODI) scenarios and load plans.

See

<http://docs.oracle.com/middleware/1221/core/ODING/GUID-3F74BFAB-99E9-4060-86E8-F70A8352A701.htm#ODING291> for details on creating and configuring the Java EE Agent.

Note: When you use the instructions in the above link to configure the Java EE agent, note the following:

- As part of step 2, ensure that you select the **Oracle Data Integrator - REST Services** template during the domain creation.
 - As part of step 13, ensure that both the **JRF-MAN_SVR** and **ODI-MGD-SVRS** options are selected.
-

Increasing the Connection Pool for `odiMasterRepository` and `odiWorkRepository`

After creating and configuring the Oracle Data Integrator (ODI) Java EE Agent, modify the connection pool settings for the `odiMasterRepository` and `odiWorkRepository` as follows:

1) Sign in to the WebLogic Administration Console:

```
http://<server>:<port>/console
```

where

`<server>` is the IP address of the server.

`<port>` port is the listening port (by default, 7001).

`/console` is the default context for the WebLogic Administration Console.

2) In the **Domain Structure** pane, expand the **Services** node and click **Data Sources**.

3) To modify the connection pool settings for **odiMasterRepository**:

- a. In the **Data Sources** table, click **odiMasterRepository**.
- b. Click the **Connection Pool** tab.
- c. In the **Initial Capacity** field, enter *100*.
- d. In the **Maximum Capacity** setting, enter *150*.
- e. Click **Save**.

4) To modify the connection pool settings for **odiWorkRepository**:

- a. In the **Data Sources** table, click **odiWorkRepository**.
- b. Click the **Connection Pool** tab.
- c. In the **Initial Capacity** field, enter *100*.
- d. In the **Maximum Capacity** setting, enter *150*.
- e. Click **Save**.

Note: No restart is required.

Configuring Primavera Analytics with OBI

Primavera Analytics supports Oracle Business Intelligence (OBI) 12c. OBI 12c represents a major update to the OBI platform, with enhancements across the entire platform as well as new Data Visualization and Data Mashup capabilities. Samples for the new Data Visualization component are included with Primavera Analytics.

Note: Data Visualization requires an additional license.

For details on OBI 12c, see <http://www.oracle.com/technetwork/middleware/bi-enterprise-edition/overview/index.html>.

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Deploying Primavera Analytics in OBI

Primavera Analytics must be deployed to an *existing* BI domain.

For more details on creating an OBI domain, see *Configuring Oracle Business Intelligence*.

To deploy Primavera Analytics manually, complete the following tasks in the existing BI domain:

- ▶ **Deploying the Repository Definition File (.rpd)** (on page 15)
- ▶ **Deploying the Primavera Analytics Catalog** (on page 16)

Deploying the Repository Definition File (.rpd)

To deploy the **OraclePrimaveraAnalytics.rpd** file to an existing BI domain:

- 1) Go to <Primavera Analytics unzipped directory>\obi\12c\rpd.
- 2) Copy **OraclePrimaveraAnalytics.rpd** to a local folder on your BI server folder.
- 3) Go to <DOMAIN_HOME>\bitools\bin\
where <DOMAIN_HOME> is the path to the BI domain.
For example, **C:\Oracle\Middleware\Oracle_Home\user_projects\domains\bi**
- 4) Run the following command to deploy the **OraclePrimaveraAnalytics.rpd** file:

```
./data-model-cmd.sh uploadrpd -U weblogic -P <WL_PASSWORD> -I  
<FILE_PATH>\OraclePrimaveraAnalytics.rpd -SI ssi -W Admin123
```

where:

<WL_PASSWORD> is the password for the WebLogic administrator.

<FILE_PATH> is the location of the OraclePrimaveraAnalytics.rpd file copied earlier.

Deploying the Primavera Analytics Catalog

To deploy the Primavera Analytics catalog into an existing Oracle Business Intelligences (OBI) domain, complete the following steps:

- 1) Sign in to OBI (<http://<server>:<port>/analytics>) with an account as a member of the WebLogic BIAdministrator group.
where
<server> is the server name or IP address of the server where OBI is installed and running.
<port> is the listening port number for OBI.
</analytics> is the default context for OBI.
- 2) At the upper right of the screen, click **Catalog** to open the deployed OBI catalog.
- 3) At the upper left of the screen, in the **Catalog** window, click the **Shared Folders** leaf node to highlight it.
- 4) At the lower left of the **Catalog** screen, in the **Task** section, select the **Unarchive** task option link.
- 5) In the **Unarchive** window, click **Browse**.
- 6) In the **File Upload** window, go to <Primavera Analytics unzipped directory>\obi\12c\catalog and select **Primavera.catalog**.
- 7) Click **Open** to close the **File Upload** window and return to the **Unarchive** window.
- 8) In the **Unarchive** window, click the **Replace** text box to view the Replace options.
- 9) Select **All** in the **Replace** list.
- 10) Click the **ACL** text box to view the ACL options.
- 11) Select **Inherit** in the **ACL** list.
- 12) Click **OK** to unarchive the **Primavera.catalog** file under **Shared Folders**.
- 13) At the upper left of the screen, in the **Catalog** window, toggle the view mode to **Admin View**.
- 14) At the upper right of the screen, select the **Show Hidden Items** option.
- 15) At the upper left of the screen, in the **Catalog** window, click the **System Folders** leaf node to highlight it.
- 16) At the lower left of the **Catalog** screen, in the **Task** section, select the **Unarchive** task option link.
- 17) In the **Unarchive** window, click **Browse**.
- 18) In the **File Upload** window, go to <Primavera Analytics unzipped directory>\obi\12c\catalog and select **metadata.catalog**.
- 19) Click **Open** to close the **File Upload** window and return to the **Unarchive** window.
- 20) In the **Unarchive** window, click the **Replace** text box to view the Replace options.
- 21) Select **Force** in the **Replace** list.
- 22) Click the **ACL** text box to view the ACL options.
- 23) Select **Create** in the **ACL** list.
- 24) Click **OK** to unarchive the **metadata.catalog** file under **System Folders**.

- 25) At the lower left of the **Catalog** screen, in the **Task** section, select the **Unarchive** task option link.
- 26) In the **Unarchive** window, click **Browse**.
- 27) In the **File Upload** window, go to **<Primavera Analytics unzipped directory>\obi\12c\catalog** and select **spatialmetadata.catalog**.
- 28) Click **Open** to close the **File Upload** window and return to the **Unarchive** window.
- 29) In the **Unarchive** window, click the **Replace** text box to view the Replace options.
- 30) Select **Force** in the **Replace** list.
- 31) Click the **ACL** text box to view the ACL options.
- 32) Select **Create** in the **ACL** list.
- 33) Click **OK** to unarchive the **spatialmetadata.catalog** file under **System Folders**.

Updating the tnsnames.ora File with OBI

As part of a standard installation of Oracle Business Intelligence (OBI), a file called `tnsnames.ora` is installed. The `tnsnames.ora` file is an Oracle database configuration file that contains network service names mapped either to connect descriptors for the local naming method or to listener protocol addresses. This means that the `tnsnames.ora` file is responsible for resolving the connection between the OBI server and any database server and instance to which OBI needs to connect, including the Primavera Data Warehouse instance and server. Therefore, the `tnsnames.ora` file requires an entry for the Primavera Data Warehouse schema in order to make this connection. See <https://docs.oracle.com/database/121/NETRF/tnsnames.htm#NETRF007> for details on the `tnsnames.ora` file.

To create an entry in the OBI `tnsnames.ora` file for Primavera Data Warehouse, complete the following steps on the server where OBI is installed:

- 1) Go to **<BI Domain>\config\fmwconfig\bienv\core** where **<BI Domain>** is the path to your OBI domain (for example, **c:\Oracle\Middleware\Oracle_Home\user_projects\domains\bi**).
- 2) Open **TNSNAMES.ora** in a text editor.
If **tnsnames.ora** does not exist, create or copy it from another location into this directory.
- 3) Create the following entry for the Primavera Data Warehouse connection:

```
<STARDW> =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = <hostname>)(PORT = <port number>))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = <Service Name>))
  )
```

where:

<STARDW> is the `net_service_name` for this connection. This name can be any name you choose. You will need this name later to configure the database connection name in the repository.

<hostname> is the IP address or name where the Primavera Data Warehouse database is installed.

<portnumber> is the port number where the Primavera Data Warehouse database is installed.

<serviceName> is the service name you used when you installed the Primavera Data Warehouse database.

- 4) Save **tnsnames.ora** and close it.

Configuring the Primavera Analytics Repository with OBI

The procedures in this section require that all of the prerequisites are completed successfully. This means that the following must be true:

- ▶ Oracle Business Intelligence (OBI) is installed and running.
- ▶ Primavera Data Warehouse is installed.
- ▶ The STARETL process has been run at least once (or the sample Primavera Data Warehouse is installed).
- ▶ An OBI domain has been configured with the Primavera Analytics Repository Definition file (.rpd) and catalog.
- ▶ The OBI server is able to connect to the Primavera Data Warehouse server and instance.
- ▶ The OBI Server DSN has been configured to allow for editing the Repository Definition file (.rpd) in online mode.

For information on *Editing Repositories in Online Mode*, see <http://docs.oracle.com/middleware/1221/biee/BIEMG/planning.htm#BIEMG126>.

Note: If an OBI domain was created using the Primavera Analytics BAR file or using the clean slate (no predefined application) option in Windows, a System DSN will not be created. To create a System DSN, refer to Doc ID 2290514.1.

Verifying the STARDW Alias with OBI

The first step in configuring the repository in Oracle Business Intelligence (OBI) is to verify or change the database instance alias, which was previously set up within the tnsnames.ora file, for connection to Primavera Data Warehouse.

If needed, complete the following steps to verify or change the Primavera Data Warehouse connection alias:

- 1) Launch the OBI Administration tool.
- 2) Select **File, Open, Online**.
- 3) Select the OBI server DSN for your OBI server.
- 4) Enter the repository password (by default, **Admin123**).
- 5) Enter the WebLogic administrator username and password.
- 6) With the repository open, select **Manage, Variables**.

- 7) In the **Variables Manager** window, on the left pane, select **Repository, Variables, Static** to modify the static repository variable.
- 8) On the right pane, double-click the line with **DW_DSN** in the **Name** column.
- 9) In the **Static Repository Variable – DW_DSN** window:
 - a. In the **Type** section, set the **Type** option to **Static**.
 - b. In the **Default Initializer** field, change the '**STARDW**' value to the correct alias for the Primavera Data Warehouse instance. Be sure to enter single quotation marks (') around the alias.

Note: This name should correspond to the name used in the **tnsnames.ora** file to identify the Primavera Data Warehouse database. See *Updating the tnsnames.ora File with OBI* (on page 17) for details.

- 10) Select **OK** to close the **Static Repository Variable – DW_DSN** window.
- 11) In the **Variable Manager** window, select **Action, Close** to close the **Variable Manager** window.
- 12) Select **File, Save** to save the repository.

Note: If you are prompted to check file consistency, click **No**.

Remain in the OBI Administration tool and continue to the next topic.

Verifying the Primavera Data Warehouse Schema Owner with OBI

The second step in configuring the repository in Oracle Business Intelligence (OBI) is to verify or change the database schema owner, which was configured during the installation of Primavera Data Warehouse. See the *Primavera Data Warehouse Installation and Configuration Guide* for details.

Note: If you are already logged into the OBI Administration tool, skip steps 1 through 5 of this procedure.

Complete the following steps to verify or change the Primavera Data Warehouse schema owner:

- 1) Launch the OBI Administration tool.
- 2) Select **File, Open, Online**.
- 3) Select the OBI server DSN for your OBI server.
- 4) Enter the repository password (by default, **Admin123**).
- 5) Enter the WebLogic administrator username and password.
- 6) With the repository open, select **Manage, Variables**.
- 7) In the **Variables Manager** window, on the left pane, select **Repository, Variables, Static** to modify the static repository variable.
- 8) On the right pane, double-click the line with **DW_USERNAME** in the **Name** column.
- 9) In the **Static Repository Variable – DW_USERNAME** window:
 - a. In the **Type** section, set the **Type** option to **Static**.

- b. In the **Default Initializer** field, change the '**staruser**' value to the schema owner for the Primavera Data Warehouse instance. Be sure to enter single quotation marks (') around the value.
- 10) Select **OK** to close the **Static Repository Variable – DW_USERNAME** window.
- 11) In the **Variable Manager** window, select **Action, Close** to close the **Variable Manager** window.
- 12) Select **File, Save** to save the repository.

Note: If you are prompted to check file consistency, click **No**.

Remain in the OBI Administration tool and continue to the next topic.

Updating the Primavera Analytics Repository with the Primavera Data Warehouse Schema Owner Password with OBI

The third step in configuring the repository in Oracle Business Intelligence (OBI) is to enter the Primavera Data Warehouse schema owner password.

Note: If you are already logged into the OBI Administration tool, skip steps 1 through 5 of this procedure.

Complete the following steps to enter the Primavera Data Warehouse schema owner password:

- 1) Launch the OBI Administration tool.
- 2) Select **File, Open, Online**.
- 3) Select the OBI server DSN for your OBI server.
- 4) Enter the repository password (by default, **Admin123**).
- 5) Enter the WebLogic administrator username and password.
- 6) With the repository open, do the following to update the password:
 - a. In the Physical section on the right, right-click the physical connection source (by default, **Oracle Primavera P6 Data Warehouse**) and select **Properties**.
 - b. Select the **Connection Pools** tab.
 - c. Double-click the **Oracle Primavera P6 Data Warehouse Connection Pool**.
 - d. On the **General** tab, on the same row as username, enter the password for the Primavera Data Warehouse schema owner.
 - e. Click **OK** and re-enter the password to confirm the change.
 - f. Click **OK** to close the **Connection Pool - Oracle Primavera P6 Data Warehouse Connection Pool** window.
 - g. Select **File, Save** to save the repository.

Note: If you are prompted to check file consistency, click **No**.

Remain in the OBI Administration application and continue to the next topic.

Updating the Primavera Analytics Repository for P6 EPPM URL Links with OBI

The fourth step in configuring the repository in Oracle Business Intelligence (OBI) is to change the P6 EPPM URL links. This step is only required if you are using P6 EPPM. If you are not using P6 EPPM, you can skip this section. These links allow OBI users to navigate from an OBI analysis to P6 EPPM.

Note: If you are already logged into the OBI Administration tool, skip steps 1 through 5 of this procedure.

Complete the following steps to verify or change the Primavera Data Warehouse schema owner:

- 1) Launch the OBI Administration tool.
- 2) Select **File, Open, Online**.
- 3) Select the OBI server DSN for your OBI server.
- 4) Enter the repository password (by default, **Admin123**).
- 5) Enter the WebLogic administrator username and password.
- 6) With the repository open, select **Manage, Variables**.
- 7) In the **Variables Manager** window, on the left pane, select **Repository, Variables, Static** to modify the static repository variable.
- 8) On the right pane, double-click the line with **DW_P6_LINK_BASE_URL** in the **Name** column.
- 9) In the **Static Repository Variable – DW_P6_LINK_BASE_URL** window:
 - a. In the **Type** section, set the **Type** option to **Static**.
 - b. In the **Default Initializer** field, change the '**http://<localhost>:<8080>/p6**' value with the correct base URL for your P6 EPPM deployment. Be sure to enter single quotation marks (') around the value.
 where **<localhost>** is replaced with the server name or IP Address of your organizations P6 EPPM deployment, **<8080>** is replaced with the server listening port for your organizations P6 EPPM deployment, and **</p6>** is the name of the deployment of P6 EPPM.
- 10) Select **OK** to close the **Static Repository Variable – DW_P6_LINK_BASE_URL** window.
- 11) In the **Variable Manager** window, select **Action, Close** to close the **Variable Manager** window.
- 12) Select **File, Save** to save the repository.

Note: If you are prompted to check file consistency, click **No**.

Remain in the OBI Administration application and continue to the next topic.

Updating the Primavera Analytics Repository for Primavera Unifier URL Links with OBI

The fifth step in configuring the repository in Oracle Business Intelligence (OBI) is to change the Primavera Unifier URL links. This step is only required if you are using Primavera Unifier. If you are not using Primavera Unifier, you can skip this procedure. These links allow OBI users to navigate from an OBI analysis to Primavera Unifier.

Note: If you are already logged into the OBI Administration tool, skip steps 1 through 5 in this procedure.

Complete the following steps to verify or change the Primavera Data Warehouse schema owner:

- 1) Launch the OBI Administration tool.
- 2) Select **File, Open, Online**.
- 3) Select the OBI server DSN for your OBI server.
- 4) Enter the repository password (by default, **Admin123**).
- 5) Enter the WebLogic administrator username and password.
- 6) With the repository open, select **Manage, Variables**.
- 7) In the **Variables Manager** window, on the left pane, select **Repository, Variables, Static** to modify the static repository variable.
- 8) On the right pane, double-click the line with **DW_UNIFIER_LINK_BASE_URL** in the **Name** column.
- 9) In the **Static Repository Variable – DW_UNIFIER_LINK_BASE_URL** window:
 - a. In the **Type** section, set the **Type** option to **Static**.
 - b. In the **Default Initializer** field, change the '**http://<localhost>:<8080>/<bluedoor>**' value with the correct base URL for your Primavera Unifier deployment. Be sure to enter single quotation marks (') around the value.
where **<localhost>** is replaced with the server name or IP Address of your organizations Primavera Unifier deployment, **<8080>** is replaced with the server listening port for your organizations Primavera Unifier deployment, and **</bluedoor>** is the name of the deployment of Primavera Unifier.
- 10) Select **OK** to close the **Static Repository Variable – DW_UNIFIER_LINK_BASE_URL** window.
- 11) In the **Variable Manager** window, select **Action, Close** to close the **Variable Manager** window.
- 12) Select **File, Save** to save the repository.

Note: If you are prompted to check file consistency, click **No**.

Reload Files and Metadata with OBI

At this point, you have completed configuring the Oracle Business Intelligence (OBI) repository in online mode, and you must reload the files and metadata for the OBI Server. To do this, complete the following steps:

- 1) Sign in to OBI (**http://<server>:<port>/analytics**) with an account as a member of the WebLogic BIAdministrator group.
where
<server> is the server name or IP address of the server where OBI is installed and running.
<port> is the listening port number for OBI.
/analytics is the default context for OBI.

- 2) At the upper right of the screen, click **Administration** .
- 3) Under **Maintenance and Troubleshooting**, click **Reload Files and Metadata**.

Adding Users for Primavera Analytics with OBI

When you installed and configured Primavera Data Warehouse, you added users in P6 EPPM and/or Primavera Unifier, set the account access, ran the global security service, and run the STARETL process. These steps are described in the sections "Adding P6 EPPM Users for Primavera Data Warehouse" and "Adding Primavera Unifier Users for Primavera Data Warehouse" in the *Primavera Data Warehouse Installation and Configuration Guide*.

You must add these users in Oracle Business Intelligence (OBI) in order for them to access to the Primavera Data Warehouse schema through OBI. To do this, complete the following steps:

Note: After *Deploying Primavera Analytics in OBI* (on page 15) into an existing OBI domain using the clean slate (no predefined application) option, default roles will not be available. You will need to create the roles manually using OBIEE documentation.

- 1) Sign in to the OBI Enterprise Manager URL with WebLogic Administrator credentials. For example, *weblogic*:
`http://<server>:<port>/em`
 where:
 <server> is the server name or IP address of the server where OBI is installed and running.
 <port> is the listening port number for OBI.
 /em is the default context for OBI Enterprise Manager.
- 2) At the upper right of the screen, click **WebLogic Domain** to expand the menu.
- 3) Click **Security**, then click **Users and Groups**.
- 4) On the **Users** tab, click **Create**.
- 5) In the **Create a New User** form:
 - a. In the **Name** field, enter the same username that was entered in P6 EPPM or Primavera Unifier.
 - b. In the **Password** and **Confirm Password** fields, enter a password.
 - c. Click **OK**.
- 6) At the upper right of the screen, click **WebLogic Domain** to expand the menu.
- 7) Click **Security**, then click **Application Roles**.
- 8) From the **Application Stripe** drop-down menu, select **obi**.
- 9) Click the **Search** button next to the **Role Name** text box.
- 10) From the table, click the row of the appropriate **Role Name** for the user. For example, *BICConsumer*, *BICContentAuthor*, or *BIServiceAdministrator*.
- 11) With the **Role Name** selected, click **Edit**.
- 12) In the **Members** section, click **Add**.
- 13) In the **Add Principal** form:
 - a. From the **Type** drop-down menu, select **User**.

- b. Enter the user's name into the **Principal Name** text box, and then click the search button next to the **Display Name** text box.
 - c. Click on the row for the user in the **Searched Principal** table.
 - d. Click **OK**.
- 14) Repeat steps as needed for each P6 EPPM or Primavera Unifier user account that needs to access Primavera Data Warehouse through OBI.
- 15) Sign out of the OBI Enterprise Manager.

Optional Installation Procedures

This chapter describes optional installation procedures you can choose to install with Primavera Analytics.

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Importing Mobile Dashboards with OBI

In addition to the sample catalog, Primavera Analytics also includes mobile dashboards developed using the Oracle Business Intelligence (OBI) Mobile App Designer. These dashboards are in HTML5 format, which means they can be opened in any modern browser or on any type of mobile device.

The following prerequisites must be met in order to use mobile dashboards:

- ▶ OBI Enterprise Edition 11.1.1.9 or higher
- ▶ OBI Mobile App Designer patch 18794832, which is available at <http://support.oracle.com>.

To import mobile dashboards, complete the following steps:

- 1) Sign in to OBI with an account as a member of the WebLogic BIAdministrator group:

`http://<server>:<port>/analytics`

where

`<server>` is the server name or IP address of the server where OBI is installed and running.

`<port>` is the listening port number for OBI.

`/analytics` is the default context for OBI.

- 2) At the upper right of the screen, click **Catalog** to open the deployed OBI catalog.
- 3) At the upper left of the screen, in the **Catalog** window, click the **Shared Folders** leaf node to highlight it.
- 4) At the lower left of the **Catalog** screen, in the **Task** section, select the **Unarchive** task option link.
- 5) In the **Unarchive** window, click **Browse**.
- 6) In the **File Upload** window, go to **<Primavera Analytics unzipped directory>\obi12c\catalog** and select **App Store.catalog**.
- 7) Click **Open** to close the **File Upload** window and return to the **Unarchive** window.

- 8) In the **Unarchive** window, click the **Replace** text box to view the Replace options.
- 9) Select **All** in the **Replace** list.
- 10) Click the **ACL** text box to view the ACL options.
- 11) Select **Inherit** in the **ACL** list.
- 12) Click **OK** to unarchive **App Store.catalog** under the **Shared Folders**.
- 13) To access the dashboards from a mobile device, log in to the OBI Mobile App Store at `http://<server>:<port>/mobile/appstore`.

Deploying the D3 Library with OBI

D3 (Data-Driven Documents) is a JavaScript library that allows users to manipulate data into customizable, visual representations of their analyses. These visualizations can go beyond what is possible using the built-in chart types within OBI. For more information on D3, please see <https://d3js.org/>.

To deploy the D3 library on the BI server, complete the following steps:

- 1) From the BI Server, download version 3.5.17 from the D3 website:
<https://github.com/d3/d3/releases/download/v3.5.17/d3.zip>
- 2) Unzip the contents of **d3.zip**.
- 3) Copy the **d3** folder to the following location on the BI server:
`<DOMAIN_HOME>\servers\bi_server1\tmp_WL_user\analytics\za0lic\war\res`
where `<DOMAIN_HOME>` is the BI domain.
For example, `C:\Oracle\Middleware\Oracle_Home\user_projects\domains\bi`.
- 4) Restart OBIEE.

Setting up Oracle R for OBI

Oracle R is a widely-used environment for statistical computing and graphics. R can be used alongside multiple data sources, including external files or databases. OBI 12c introduces four new embedded R functions, and additionally allows users to create custom R scripts.

In order to take advantage of this new feature, complete the following steps:

- 1) Install R and the included R packages.
For more details, see <http://docs.oracle.com/middleware/1221/biee/BIESG/answersconfigset.htm#BIESG9375>
- 2) After completing installation, manually install one additional R package as follows on the OBI server:
 - a. Open a command prompt and run R.
 - b. To install the required package, run the following command:
`install.packages("glm2")`
 - c. Exit R using the command: `quit()`.
- 3) Copy the Primavera Analytics R scripts into the OBI scripts repository:
 - a. Go to the `<Primavera Analytics unzipped directory>\obi\12c\catalog\xml` directory.

- b. Copy the `cegbu_analytics` folder into `<FMW_HOME>\bi\bifoundation\advanced_analytics\scripts_repository`.

Deploying the Custom Skin with OBI

Oracle includes a custom skin for Primavera Analytics that can be used optionally to match the theme used with other Primavera products.

To deploy the custom skin, complete the following steps:

- 1) Go to your Oracle Fusion Middleware home. For example, `<FMW_HOME>` would be `C:\OracleMiddleware\Oracle_Home`.
- 2) Create a folder called **custom_skins**.
- 3) Go to the `<Primavera Analytics unzipped directory>\obi\12c\custom_skin\OBI` directory.
- 4) Copy the **bicustom** folder to the **custom_skins** folder.
- 5) To deploy the custom skin in WebLogic:
 - a. Sign in to the WebLogic Administration Console.
`http://<server>:<port>/console`
 where
`<server>` is the IP address of the server.
`<port>` is the listening port (by default, **9500**).
`/console` is the default context for the WebLogic Administration Console.
 - b. In the **Welcome** window, sign in to the WebLogic domain.
 - c. In the **Change Center** pane, click **Lock & Edit**.
 - d. In the **Domain Structure** pane, click **Deployments**.
 - e. In the **Summary of Deployments** pane, select the **Control** tab, and then click **Install**.
 - f. Navigate to the folder containing the custom style.
 For example, `/u01/home/Oracle/Middleware/Oracle_Home/custom_skins/bicustom`.
 - g. Click **Next**.

Note: Select **Next** to advance to the next step of the procedure.

- h. Select **Install this deployment as an application**.
- i. Select **bi_cluster** as the deployment target
- j. Set the name to *AnalyticsRes*.
- k. Select **I will make the deployment accessible from the following location**.
- l. Select **Yes, take me to the deployment's configuration screen**.
- m. Click **Finish**.
- n. Click the **Configuration** tab.
- o. In the **Context Root** field, enter: `/analyticsRes`
- p. Click **Save**.
- q. Click **OK** to save the deployment plan.

- r. In the **Change Center** pane, click **Activate Changes**.
 - s. Click **Close** to dismiss the confirmation message window.
- 6) To start the new application:
- a. In the **Domain Structure** pane, click **Deployments**.
 - b. Select the **Control** tab.
 - c. In the **Deployments** list, select the **AnalyticsRes** checkbox.

Click **Start**.

- a. Select **Servicing all requests**.
- 1) To update the **instanceconfig.xml** file and specify the path to the custom skin to be accessed by Presentation Services:
- a. Open the **instanceconfig.xml** file for editing.
For example, `<FMW_HOME>/user_projects/domains/bi/config/OBIPS/instanceconfig.xml`

Under **ServerInstance**, locate the UI section.

- a. Replace the **UI** section with the following:

```
<UI>
  <DefaultSkin>Primavera</DefaultSkin>
  <DefaultStyle>Primavera</DefaultStyle>
</UI>
```

- b. After the **UI** section, add a **URL** section with the following:

```
<URL>

<CustomerResourcePhysicalPath>PATH_TO_BI_CUSTOM_FOLDER</CustomerResourcePhysicalPath>

<CustomerResourceVirtualPath>/analyticsRes/res</CustomerResourceVirtualPath>
</URL>
```

where `<CustomerResourcePhysicalPath>` is the location of the **bicustom** folder.

For example, `C:\Oracle\Middleware\Oracle_Home\custom_skins\bicustom`

- a. Save the changes and close **instanceconfig.xml**.
- 1) To completely stop and restart the BI domain:
- a. Go to `<DOMAIN_HOME>\bitools\bin`.
 - b. Run **stop.cmd** (for Windows) or **stop.sh** (for UNIX or Linux) to shut down the BI domain.
 - c. Run **start.cmd** (for Windows) or **start.sh** (for UNIX or Linux) to startup the BI domain.

Generating the RPD from the UDML File

If you have the UDML file you can generate your own RPD that includes all the Primavera subject areas. This allows for some flexibility with versioning, if there are any changes or releases of Oracle Business Intelligence that might cause conflict with your RPD. With the UDML, you can directly edit or update the UDML and generate a new RPD based on your changes. An added advantage is that it makes it easier to copy and paste to add more than 20 codes and UDFs rather than using the GUI OBI Admin tool for the RPD.

Prerequisites

- ▶ OBI is installed.
- ▶ Download the UDML file from the media pack.

Procedure

To generate a new RPD:

- 1) On the machine with OBI installation, copy the UDML file, **primavera_analytics_rpd.udml**, from the **P6_R31_Analytics\obi\rbp** folder in the media pack.

Note: When generating the new RPD you will be supplying your own password.

- 2) Open a terminal or cmd line prompt and go to the directory **<OBI HOME>\bifoundation\server\bin** folder.

- 3) For Windows installations, run the following command:

```
ngudmlexec.exe -P prima123vera -I
C:\temp\test\primavera_analytics_rpd.udml -O
C:\temp\test\PrimaveraAnalytics.rpd
```

For Linux installations, adjust the directories as needed.

where:

-P is the password of the new RPD.

-I is the directory where the UDML file has been copied to.

-O is the directory where your new RPD will be created.

- 4) If there are other options you would like to set, use the help in this utility to find the parameters.
- 5) After the RPD is generated, deploy it through WebLogic, like the RPD that is shipped with P6 Analytics.

Importing Data Visualization Samples with OBI

Data Visualization, a separately licensed component of Oracle Business Intelligence (OBI) 12c, combines a new content creation UI with the ability to upload and join external data to existing Primavera Analytics sources (P6 EPPM and Unifier). Primavera Analytics includes sample projects that demonstrate some of the capabilities of Data Visualizer.

The following prerequisites must be met in order to use the Data Visualization samples:

- ▶ Oracle Business Intelligence Enterprise Edition 12.2.1.0.0 or higher

▶ The Data Visualization component of OBI 12c

To import the Data Visualization samples into OBI 12c, complete the following steps:

- 1) Sign in to OBI with an account as a member of the WebLogic BIAdministrator group :

`http://<server>:<port>/analytics`

where

`<server>` is the server name or IP address of the server where OBI is installed and running.

`<port>` is the listening port number for OBI.

`/analytics` is the default context for OBI.

- 2) At the upper right of the screen, click **Catalog** to open the deployed OBI catalog.
- 3) At the upper left of the screen, in the **Catalog** window, click the **Shared Folders** leaf node to highlight it.
- 4) At the lower left of the **Catalog** screen, in the **Task** section, select the **Unarchive** task option link.
- 5) In the **Unarchive** window, click **Browse**.
- 6) In the **File Upload** window, go to **<Primavera Analytics unzipped directory>\obi\12c\catalog\dv_samples** and select **DV Samples.catalog**.
- 7) Click **Open** to close the **File Upload** window and return to the **Unarchive** window.
- 8) In the **Unarchive** window, click the **Replace** text box to view the Replace options.
- 9) Select **All** in the **Replace** list.
- 10) Click the **ACL** text box to view the ACL options.
- 11) Select **Inherit** in the **ACL** list.
- 12) Click **OK** to unarchive **DV Samples.catalog** under the **Shared Folders**.

Importing the Data Mashup Sample Spreadsheet

One of the sample Data Visualization projects demonstrates the Data Mashup capabilities of Oracle Business Intelligence (OBI) 12c. In order to use this sample, upload an additional data file for use as a data source.

Note: This Data Mashup sample is designed specifically to work with the sample Primavera Data Warehouse schema and is for demonstration purposes only.

To upload the Data Mashup sample spreadsheet, complete the following steps:

- 1) Sign in to OBI with an account as a member of the WebLogic BIAdministrator group:

`http://<server>:<port>/va`

where

`<server>` is the server name or IP address of the server where OBI is installed and running.

`<port>` is the listening port number for OBI.

/va is the default context for the Data Visualization component of OBI 12c.

- 2) At the top of the screen, click the **Data Sources** icon.
- 3) At the upper right of the screen, click **Add XSA**.
- 4) Click **Select File**.
- 5) Go to <Primavera Analytics unzipped directory>\obi\12c\catalog\dv.
- 6) Select **sample_wo_list.xlsx**.
- 7) In the **Upload a File** form, click **Add XSA**.
- 8) At the top of the screen, click the **Home icon**.
- 9) At the left of the screen, under the **Display** menu, click **VA Projects**.
- 10) Click the **Data Mashup Example** VA Project.
- 11) At the upper left of the screen, click the **Data Sources** icon.
- 12) At the lower left of the screen, click **Source Diagram**.
- 13) In the pop-up window, click on the circle in the middle of the line linking the **Primavera – Activity** subject area and the **sample_wo_list** data sources.
- 14) In the **Connect Sources** form:
 - a. Leave the **This connection will** set to **Extend a Dimension**.
 - b. Click **Add Another Match**.
 - c. Under **Primavera – Activity**, click the **Select Column** drop-down menu.
 - d. Click the **Activity** folder to expand it
 - e. Click the **General – (Activity)** sub-folder to expand it.
 - f. Select the **Activity ID** column.
 - g. Click **OK** to connect the data sources.
- 15) At the top right of the screen, click the **Canvas Settings** icon and select **Refresh Data**.

Upgrading to the Latest Version

You can upgrade the Primavera Analytics Repository Definition (.rpd) file and sample catalog from version 18 or version 19 to Primavera Analytics Version 20. This allows the new content available in Primavera Analytics Version 20 to be installed while preserving any custom changes you may have made to your existing the earlier catalog or Repository Definition (.rpd) file. To upgrade the Primavera Analytics Repository Definition (.rpd) file and the Oracle Business Intelligence (OBI) catalog, complete the procedures in this section.

Note: You must upgrade your Primavera Data Warehouse schema and Primavera Analytics Repository Definition file (.rpd) to Primavera Analytics Version 20 before importing the Primavera Analytics Version 20 sample catalog.

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Upgrading the OBI Catalog to Primavera Analytics Version 20

To upgrade the Primavera Analytics sample catalog from version 18 or version 19 to Primavera Analytics Version 20, complete the following steps on the server where Oracle Business Intelligence (OBI) is installed:

- 1) Back up your existing catalog.
- 2) Sign in to OBI with an account as a member of the WebLogic BIAdministrator group. For example, WebLogic.

`http://<server>:<port>/analytics`

where

`<server>` is the server name or IP address of the server where OBI is installed and running.

`<port>` is the listening port number for OBI.

`/analytics` is the default context for OBI.

- 3) In the menubar, select **Catalog** to open the deployed OBI catalog.
- 4) In the **Catalog** window:
 - a. In the **Folders** section of the sidebar, select **Shared Folders**.
 - b. In the **Task** section of the sidebar, select the **Unarchive** link.
- 5) In the **Unarchive** window:
 - a. Select **Browse...** to select the Archive file.
The **File Upload** window displays.

- b. Go to <Primavera Analytics unzipped directory>\obi\12c\catalog and select **Primavera.catalog**.
- c. Select **Open** and return to the **Unarchive** window.
- d. In the **Replace** list, select one of the following options for the existing catalog:
 - **All:** To fully replace your existing catalog with the new catalog.
 - **None:** To upload the new catalog content into your existing catalog.

Note: To fully control which items from the new catalog are uploaded into your existing catalog, Unarchive into a separate folder. Then you can manually copy any items from that location over into your existing catalog folders under **Shared Folders**.

- e. Select **Inherit** from the **ACL** list.
 - f. Select **OK** to unarchive the **Primavera.catalog** file under **Shared Folders**.
- 6) In the **Catalog** window:
- a. Toggle the view mode to **Admin View**.
 - b. Select **Show Hidden Items**.
 - c. In the **Folders** section of the side bar, select **System Folders**.

Note: If you have made any custom mapping configurations, skip steps 6d, and 7. as they can overwrite existing map layers and background maps.

- d. In the **Task** section of the sidebar, select the **Unarchive** link.
- 7) In the **Unarchive** window:
- a. Click **Browse...**
The **File Upload** window displays.
 - b. Go to <Primavera Analytics unzipped directory>\obi\12c\catalog and select **spatialmetadata.catalog**.
 - c. Select **Open** and return to the **Unarchive** window.
 - d. Select **Force** from the **Replace** list.
 - e. Select **Create** from the **ACL** list.
- 8) Click **OK** to unarchive the **spatialmetadata.catalog** file under **System Folders**.
- 9) Under **Shared Folders**, go to the **Dashboards** folder.
- 10) Delete the following items:
- ▶ 09. Resource Analysis
 - ▶ 10. Industry Samples
 - ▶ 11. Admin

Note: These items were renamed to accommodate the new Project Performance Measurement dashboard and are no longer needed.

Updating Catalog Objects for OBI

To update the underlying XML of the catalog objects, complete the following steps:

Note: Complete this procedure only if you have upgraded your OBI environment.

- 1) Sign in to Oracle Business Intelligence (OBI) URL as a member of the WebLogic BIAdministrator group :
`http://<server>:<port>/analytics`
 where
 <server> is the server name or IP address of the server where OBI is installed and running.
 <port> is the listening port number for OBI.
 /analytics is the default context for OBI.
- 2) In the menubar, select **Catalog** to open the deployed OBI catalog.
- 3) Select **Administration**.
- 4) In the **Maintenance and Troubleshooting** section, select **Scan and Update Catalog Objects That Require Updates**.
- 5) Select the **Update Catalog Objects** link.
 Wait for the scan and update process to complete.
- 6) Select **Sign Out** to exit OBI.

Upgrading the Repository Definition File (.rpd) to Primavera Analytics Version 20

To upgrade the Primavera Analytics Repository Definition file (.rpd) from version 18 to Primavera Analytics Version 20, complete the following steps on the server where Oracle Business Intelligence (OBI) is installed:

- 1) Go to the **<Primavera Analytics unzipped directory>\obi\12c\rpd directory**.
- 2) Copy the **OraclePrimaveraAnalytics.rpd** file to a local folder on the server where you installed OBI. For example, **C:\temp**.
- 3) Open a terminal or command prompt window and go to your **BI Domain tools** folder.
 For example, **C:\Oracle\Middleware\Oracle_Home\user_projects\domains\bi\bitools\bin**.
- 4) Use the **data-model-cmd.cmd** command (with Windows) or the **data-model-cmd.sh** command (with UNIX or Linux) in the terminal or command prompt to download the currently deployed Repository Definition file, as follows:

```
data-model-cmd.cmd downloadrpd -O C:\Temp\OraclePrimaveraAnalytics
current.rpd -W <repository password> -U <username> -P <password> -SI
<service instance>
```

Note: If you are using OBI 12.2.1.1 or later, use the **datamodel.cmd** command (with Windows) or **datamodel.sh** command (with UNIX or Linux).

For example:

```
data-model-cmd.cmd downloadrpd -O
C:\Temp\OraclePrimaveraAnalytics_current.rpd -W Admin123 -U weblogic -P
weblogic1 -SI ssi
```

A message displays: *RPD Download completed successfully.*

- 5) Use the **equalizerpds.cmd** command (with Windows) or the **equalizerpds.sh** command (with UNIX or Linux) in the terminal or command prompt to equalize your current RPD with the new RPD, as follows:

```
equalizerpds.cmd -B <current repository password> -C <path to current
rpd> -E <new repository password> -F <path to new repository> -O <path
to equalized repository>
```

For example:

```
equalizerpds.cmd -B Admin123 -C
C:\Temp\OraclePrimaveraAnalytics_current.rpd -E Admin123 -F
C:\Temp\OraclePrimaveraAnalytics.rpd -O
C:\Temp\OraclePrimaveraAnalytics_equalized.rpd
```

- 6) Use the **comparerpd.cmd** command (with Windows) or the **comparerpd.sh** command (with UNIX or Linux) in the terminal or command prompt to generate a patch file with the differences between your existing RPD and the new equalized RPD, as follows:

```
comparerpd.cmd -W <new repository password> -C <path to new equalized
rpd> -P <current repository password> -G <path to current repository>
-D <patch file>
```

For example:

```
comparerpd.cmd -W Admin123 -C
C:\Temp\OraclePrimaveraAnalytics_equalized.rpd -P Admin123 -G
C:\Temp\OraclePrimaveraAnalytics_current.rpd -D C:\Temp\rpd_patch.xml
```

- 7) Use the **biserverxmlexec.cmd** command (with Windows) or the **biserverxmlexec.sh** command (with UNIX or Linux) to patch the existing Repository Definition file, as follows:

```
biserverxmlexec.cmd -P <repository password> -I <path to patch file> -B <path to
downloaded repository> -O <output repository path name>
```

For example:

```
biserverxmlexec.cmd -P Admin123 -I C:\Temp\rpd_patch.xml -B
C:\Temp\OraclePrimaveraAnalytics_current.rpd -O
C:\Temp\OraclePrimaveraAnalytics_patched.rpd
```

Note: After you run this command, a new Repository Definition file is created in the location specified with the -O parameter. This is the file that gets deployed in the rest of this procedure.

- 8) Use the **data-model-cmd.cmd** command (with Windows) or the **data-model-cmd.sh** command (with UNIX or Linux) to upload the patched Repository Definition file, as follows:

```
data-model-cmd.cmd uploadrpd -I
C:\Temp\OraclePrimaveraAnalytics_patched.rpd -W <repository_password>
-U <username> -P <password> -SI <service_instance>
```

Note: If you are using OBI 12.2.1.1 or later, use the **datamodel.cmd** command (with Windows) or **datamodel.sh** command (with UNIX or Linux).

For example:

```
data-model-cmd.cmd uploadrpd -I  
C:\Temp\OraclePrimaveraAnalytics_patched.rpd -W Admin123 -U weblogic -P  
weblogic1 -SI ssi
```

You should receive a message: *RPD Upload completed successfully.*

- 9) Sign in to the OBI Enterprise Manager URL as a WebLogic Administrator. For example, *weblogic*:

```
http://<server>:<port>/em
```

where

<server> is the server name or IP address of the server where OBI is installed and running.

<port> is the listening port number for OBI.

/em is the default context for OBI Enterprise Manager.

- 10) Upon signing into OBI Enterprise Manager, the upper left corner of the screen will show the **Target Navigation Tree** icon. Click to expand, and then click the arrow icon next to the leaf node called **Business Intelligence** to expand this folder.
- 11) With the Business Intelligence leaf node expanded, the **biinstance** hyperlink should appear below the leaf node.
- 12) Click the **biinstance** hyperlink. This displays on the right portion of the screen with the properties and available configuration options for this deployment of OBI.
- 13) Click the **Availability** parent tab, and then click the **Processes** child tab.
- 14) Click the **Restart All** link to restart all components of this OBI deployment. When the confirmation window appears, click **Yes**. When the OBI deployment restarts, a message appears.
- 15) Click **Close** to close the message.
- 16) Click the **user menu** (For example, WebLogic, located in the upper right of the screen directly below the browser toolbar), then select **Sign Out**.

Primavera Analytics Troubleshooting

This chapter describes known Primavera Analytics issues with suggested workarounds as resolutions.

Analysis with Activity Notebook Text Causes Excessive Temp Tablespace

Scenario: When building an analysis that includes the project name, activity name, active notebook topic name, and activity notebook topic text, the query causes excessive growth of the temp tablespace, and will likely never return data. With filtering though, data may be returned, but can take a long time to run when the activity notebook topic text is included.

Resolution: when accessing notebook topics, it is recommended to filter to the specific level, such as activity, or project. Notebook topics must not be added in an analysis that returns large sets of data. Instead, it should be included in a sub-analysis for more fine-grained smaller returned sets of data. This is a limitation of OBIEE rendering this data type. Using smaller notebook topics or switching from a blob\clob could help with performance.

Appendix: Importing Primavera Data Warehouse Sample Schema

Primavera Analytics includes a sample Primavera Data Warehouse schema that can be used to demonstrate the capabilities of Primavera Analytics. This sample schema contains data loaded from:

- ▶ P6 EPPM
- ▶ Primavera Unifier

The sample schema also contains historical data captures to demonstrate the historical capabilities of not only the power of the capturing daily history in Primavera Data Warehouse, but also a deep-dive analysis that can be performed within Oracle Business Intelligence using daily historical data. The sample schema also contains industry-specific data captures for Project Burn Down and Project Work Planning.

The sample schema is meant to demonstrate the overall capabilities of both Primavera Analytics and Primavera Data Warehouse.

Note: Importing the sample Primavera Data Warehouse is optional. Therefore all procedures in this chapter are optional.

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Creating a Sample Primavera Data Warehouse Instance

The Primavera Data Warehouse sample schema is meant for demonstration purposes only. Oracle recommends that you import the sample schema into a unique Oracle Database instance. **Do not** install sample schema in the same instance as the production Primavera Data Warehouse instance.

Notes:

- Running the STARETL/ODI process against the restored sample Primavera Data Warehouse schema will impact the content in the sample schema.
- Make sure that the PATH variable includes the path to your ORACLE_HOME/bin directory.

Do the following to create the Oracle tablespaces that are required for Primavera Data Warehouse. These steps assume that an Oracle instance has already been created. For information about creating an Oracle instance, see https://docs.oracle.com/cd/E11882_01/server.112/e25494/create.htm#ADMIN002.

Once the Oracle instance is created, complete the following steps to create the sample Primavera Data Warehouse Tablespaces:

- 1) Sign in to the sample Primavera Data Warehouse instance as a user with DBA privileges. For example, SYSTEM.

- 2) If these tablespaces do not already exist, create the necessary tablespaces with the following statements:

```
create tablespace <STAR_DAT1>
datafile '<path>/STAR_DAT1.dbf'
Size 32m
Autoextend on
Extent management local;
```

where

<STAR_DAT1> is the name of the star tablespace.

<path> is the path to the folder where the database resides.

- 3) If these tablespaces do not already exist, create the necessary tablespaces with the following statements:

```
create tablespace <STAR_HST1>
datafile '<path>/STAR_HST1.dbf'
Size 32m
Autoextend on
Extent management local;
```

where

<STAR_HST1> is the name of the star history tablespace.

<path> is the path to the folder where the data files reside.

- 4) Since the Oracle Data Pump export was created using the database username of STARUSER, the import and the sample Primavera Data Warehouse schema username must also be STARUSER.

Create the database user STARUSER with the following statements:

```
prompt Creating users STARUSER
--METADATA TYPE:USER CHANGE:CREATE NAME:STARUSER
```

```

create user STARUSER
identified by <password>
temporary tablespace <temp_table>
default tablespace <STAR_DAT1>
;
--METADATA TYPE:GRANT CHANGE:CREATE PRIVILEGE:DBA GRANTEE:STARUSER
grant dba to STARUSER;
--METADATA TYPE:GRANT CHANGE:CREATE PRIVILEGE:JOB GRANTEE:STARUSER
grant create any job to STARUSER;

```

where

<password> is that STARUSER password.

<temp_table> is the name of the tablespace for temporary data.

<STAR_DAT1> is the name of the Star tablespace.

- 5) Create a directory object within the instance for the dump file with the following SQL statement:

```
create or replace directory dmpdir as '<path_to_file>';
```

where <path_to_file> is the location of the data extracted from the **sample_expdp.zip** file.

- 6) Ensure case sensitivity for the Primavera Analytics sample database instance is set to false for database logons with the following statement:

```
alter system set sec_case_sensitive_logon=false;
```

- 7) Sign out of the database instance.

Continue to **Importing the Primavera Data Warehouse Sample Schema** (on page 43).

Importing the Primavera Data Warehouse Sample Schema

Once you have created and configured the sample Primavera Data Warehouse instance, complete the following steps to import the sample Primavera Data Warehouse schema:

- 1) Run the following command to import **sample.expdp** using Oracle Data Pump:

```
impdp system/<password>@<SAMPLE> directory=<dmpdir>
dumpfile=STAR152.expdp schemas=STARUSER logfile=sample.log
```

where

<password> is the password for the system account.

<SAMPLE> is the instance name for the sample Primavera Data Warehouse instance.

<dmpdir> is the directory that was created in the previous section, **Creating a Sample Primavera Data Warehouse Instance** (on page 41).

- 2) Sign in to the sample Primavera Data Warehouse instance (with SQL Plus, SQL Developer, and so on) with the STARUSER account that was created the previous section, **Creating a Sample Primavera Data Warehouse Instance** (on page 41).
- 3) Run the following command to create the context for the STARUSER:

```
CREATE OR REPLACE CONTEXT PRM_ANALYTICS_STARUSER USING secpac;
```
- 4) Sign out of SQL Plus, SQL Developer, and so on.

At this point, the sample Primavera Data Warehouse instance is restored and ready to be accessed through Oracle Business Intelligence (OBI).

Adding OBI Users for Primavera Analytics Sample Data

The sample Primavera Data Warehouse schema comes by default with a user account that must be set up and configured in your Oracle Business Intelligence (OBI) environment in order to successfully view the data contained within the sample Primavera Data Warehouse schema.

To add the sample OBI user for access to the sample Primavera Data Warehouse schema, complete the following steps:

- 1) Sign in to the OBI WebLogic Administration Console with an account as a member of the WebLogic Administrator group:

```
http://<server>:<port>/console
```

where `<server>` is the IP address of the OBI server.
`<port>` port is the listening port for OBI.
`/console` is the default context for the OBI WebLogic Administration Console.
- 2) In the **Domain Structure** section, click **Security Realm**.
- 3) Click on the realm name in the table. For example, **myrealm**.
- 4) Click the **Users and Groups** tab.
- 5) Click the **Users** sub tab.
- 6) Click **New**.
- 7) In the **Create a New User** form:
 - a. In the **Name** field, enter **demouser**.
 - b. In the **Password** and **Confirm Password** fields, enter a password.
 - c. Click **OK**.
- 8) Click **Save**.

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