Oracle

Primavera Analytics
Installation and Configuration Guide for On-Premises

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Oracle Primavera Analytics Installation and Configuration Guide for On-Premises

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Contents

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 Analytics Server needs to allow end users to create purposeful analysis based on data contained within Primavera Data Warehouse. The RPD file contains all the metadata, security rules, database connection information. It maintains the mapping of the physical tables comprising the data warehouse to the Presentation Layer, which holds the columns and tables available for use in Oracle Analytics Server.
- 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 Analytics Platform. The data stored in Primavera Data Warehouse is analyzed and rendered as reports and dashboards, by connecting Primavera Data Warehouse to Oracle Analytics Server 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 schema accumulates project and cash flow data, it provides baselines for tracking trends and for advanced business intelligence. It also provides key metrics on current data, which allow you to drill through root cause analysis.

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

About Oracle Analytics Server

Oracle Analytics Server is a powerful tool that empowers business analysts and consumers to uncover new insights and make faster, more informed business decisions.

Oracle Analytics Server brings the modern, industry-leading capabilities of Oracle Analytics Cloud to organizations that require on-premise deployments. With Oracle Analytics Server, your organization can take advantage of augmented analytics and world-class data discovery capabilities.

Oracle Analytics Server enables organizations in highly regulated industries or with multi-cloud architectures to experience the latest analytics capabilities on their own terms and preferred deployment architecture. With Oracle Analytics Server, your heritage systems can be maintained while a clear, easy, and seamless path to Oracle Cloud is ready when you are.

Oracle Analytics Server includes modern, AI-powered, self-service analytics capabilities for data preparation, visualization, enterprise reporting, augmented analysis, and natural language processing/generation. You can use these features to:

- Collect up-to-date data from your organization.
- Present the data in easy-to-understand formats, such as tables and graphs.
- Deliver data in a timely fashion to the employees in your organization.

These capabilities and the information they help you discover enable your organization to make better decisions, take informed actions, and implement more-efficient business processes.

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 Process

This process serves as a guideline to understand where you are in the overall installation and configuration process of Primavera Analytics. Each step in this process 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 process before installing Primavera Analytics. For more details, refer to *Primavera Data Warehouse Installation and Configuration Process*.

Use the following sequence 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 Analytics Server.
   - (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 Oracle Analytics Server.

   a. Configure and deploy the Repository Definition File (.rpd).

      For more details, see: ***Configuring the Primavera Analytics Repository with Oracle Analytics Server*** (on page 19) 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 Oracle Analytics Server*** (on page 18).

   d. Provide access to Oracle Analytics Server for Primavera Analytics users.

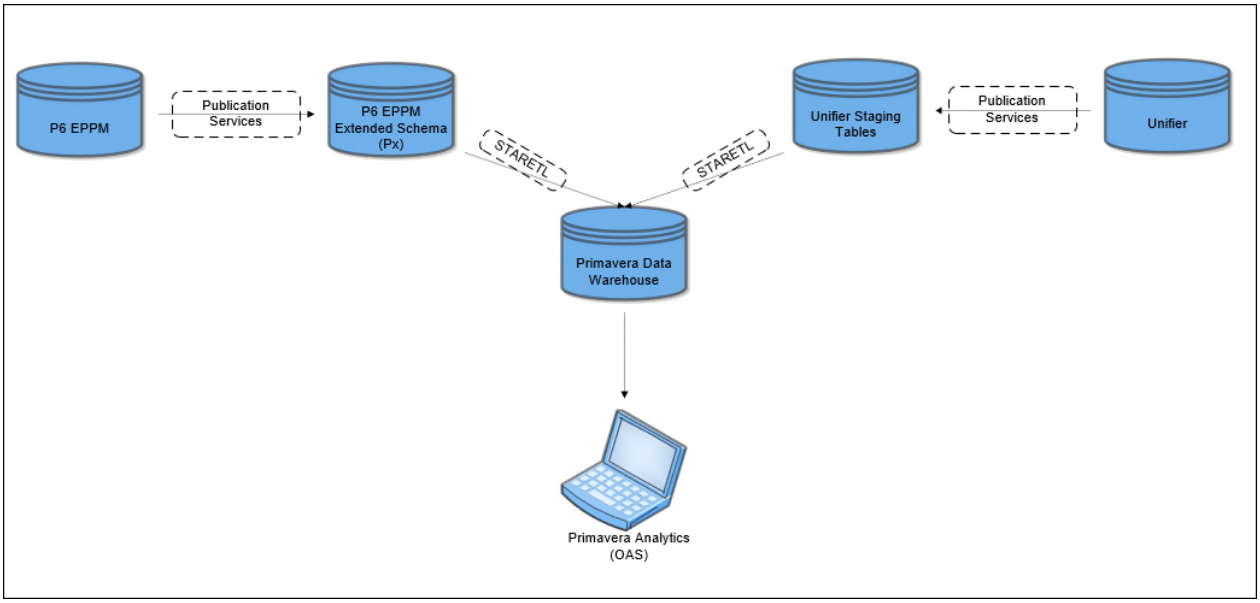
      For more details, see ***Adding Users to Primavera Analytics with Oracle Analytics Server*** (on page 24).

3) (Optional) ***Deploying the D3 Library with Oracle Analytics Server*** (on page 27).

4) (Optional) ***Importing Data Visualization Samples with Oracle Analytics Server*** (on page 28).

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 Analytics Server.

Installation Prerequisites

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

- Oracle Analytics Server.
- 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*.
- Oracle Analytics Server must be able to connect to the server and instance of Primavera Data Warehouse.

  For more details, see ***Configuring Primavera Analytics with Oracle Analytics Server*** (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.

In This Section

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 13)
- ***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.

For more details on creating and configuring the Java EE Agent, see ***Configuring the Domain for a Java EE Agent https://docs.oracle.com/en/middleware/fusion-middleware/12.2.1.4/oding/configuring-domain-java-ee-agent.html#GUID-3F74BFAB-99E9-4060-86E8-F70A8352A701***.

> **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 ODI 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 Oracle Analytics Server

Primavera Analytics supports Oracle Analytics Server. For supported version, refer to the *Tested Configurations* document..

In This Section

Deploying Primavera Analytics in Oracle Analytics Server

Primavera Analytics must be deployed to an *existing* Oracle Analytics Server domain.

For more details on configuring an Oracle Analytics Server domain, see ***Configuring the Oracle Analytics Server Domain with the Configuration Assistant https://docs.oracle.com/en/middleware/bi/analytics-server/install-config-oas/configuring-product.html#GUID-72B6F4ED-C66E-45E0-87F1-6DA73276024E***.

To deploy Primavera Analytics manually, complete the following tasks in the existing Oracle Analytics Server 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) Run the utility through a launcher script.

   For Windows, run `datamodel.cmd`.

   For Linux, run `datamodel.sh`.

   If the domain is installed in the default folder, then the location of the launcher script in Windows looks like this:

   `Oracle_Home/user_projects/domains/Domain_Name/bitools/bin/datamodel.sh or datamodel.cmd`

   If the client install does not have domain names, the launcher script location looks like this in Windows:

Oracle_Home\bi\bitools\bin\datamodel.sh or datamodel.cmd

4) Run the following command to deploy the OraclePrimaveraAnalytics.rpd file:

```
uploadrpd -I <FILE_PATH>\OraclePrimaveraAnalytics.rpd -W <RPD password>
-U <cred_username> -P <cred_password> -SI <service_instance>
```

For example, in Linux, run:

```
./datamodel.sh uploadrpd -I OraclePrimaveraAnalytics.rpd -U weblogic -P
<password> -SI ssi -W Admin123
```

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 Analytics Server (OAS) domain, complete the following steps:

1) Sign in to Oracle Analytics Server (http://<server>:<port>/analytics) as a member of the WebLogic BIAdministrator group.

   where

   <server> is the server name or IP address of the server where Oracle Analytics Server is installed and running.

   <port> is the listening port number for Oracle Analytics Server.

   /analytics is the default context for Oracle Analytics Server.
2) At the upper right of the screen, click **Catalog** to open the deployed Oracle Analytics Server 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 Oracle Analytics Server

As part of a standard installation of Oracle Analytics Server, 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 file is responsible for resolving the connection between the Oracle Analytics Server and any database server and instance to which Oracle Analytics Server 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. For more information on the tnsnames.ora file, see https://docs.oracle.com/en/database/oracle/oracle-database/23/netrf/local-naming-parameters-in-tns-ora-file.html.

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

1) Locate the `TNSNAMES.ora` file at any of the following locations in the OAS installation path:
   - <DOMAIN_HOME>\bidata\components\core\serviceinstances\ssi\oracledb
   - <ORACLE_HOME>\network\admin
   - <ORACLE_HOME>\bi\modules\oracle.bi.servicelcm\oracledb
2) Open `TNSNAMES.ora` in a text editor.

   If `tnsnames.ora` does not exist, create or copy it from another location into this directory.

   For more information on the directory locations for 'tnsnames.ora' or 'sqlnet.ora' files in Oracle Analytics Server, see Doc ID 2068474.1.
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 Oracle Analytics Server

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

- Oracle Analytics Server 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 Oracle Analytics Server domain has been configured with the Primavera Analytics Repository Definition file (.rpd) and catalog.
- The Oracle Analytics Server server is able to connect to the Primavera Data Warehouse server and instance.
- The Oracle Analytics Server Server DSN has been configured to allow for editing the Repository Definition file (.rpd) in online mode.

For more information on Oracle Analytics Server repositories, see https://docs.oracle.com/en/middleware/bi/analytics-server/metadata-oas/get-started-data-modeling.html.

> **Note**: If an Oracle Analytics Server 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 Oracle Analytics Server

The first step in configuring the repository in Oracle Analytics Server 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 Oracle Analytics Server Administration tool.
2) Select **File**, **Open**, **Online**.
3) Select your Oracle Analytics Server DSN.
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 Oracle Analytics Server*** (on page 18) 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 Oracle Analytics Server Administration tool and continue to the next topic.

Verifying the Primavera Data Warehouse Schema Owner with Oracle Analytics Server

The second step in configuring the repository in Oracle Analytics Server 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 Oracle Analytics Server 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 Oracle Analytics Server Administration tool.
2) Select **File**, **Open**, **Online**.
3) Select your Oracle Analytics Server DSN.
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 Oracle Analytics Server Administration tool and continue to the next topic.

Updating the Primavera Analytics Repository with the Primavera Data Warehouse Schema Owner Password with Oracle Analytics Server

The third step in configuring the repository in Oracle Analytics Server is to enter the Primavera Data Warehouse schema owner password.

> **Note**: If you are already logged into the Oracle Analytics Server 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 Oracle Analytics Server Administration tool.
2) Select **File**, **Open**, **Online**.
3) Select your Oracle Analytics Server DSN.
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 Oracle Analytics Server Administration application and continue to the next topic.

Updating the Primavera Analytics Repository for P6 EPPM URL Links with Oracle Analytics Server

The fourth step in configuring the repository in Oracle Analytics Server 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 Oracle Analytics Server users to navigate from an Oracle Analytics Server analysis to P6 EPPM.

> **Note**: If you are already logged into the Oracle Analytics Server 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 Oracle Analytics Server Administration tool.
2) Select **File**, **Open**, **Online**.
3) Select your Oracle Analytics Server DSN.
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 Oracle Analytics Server Administration application and continue to the next topic.

Updating the Primavera Analytics Repository for Primavera Unifier URL Links with Oracle Analytics Server

The fifth step in configuring the repository in Oracle Analytics Server 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 Oracle Analytics Server users to navigate from an Oracle Analytics Server analysis to Primavera Unifier.

> **Note**: If you are already logged into the Oracle Analytics Server 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 Oracle Analytics Server Administration tool.
2) Select **File**, **Open**, **Online**.
3) Select your Oracle Analytics Server DSN.
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 Oracle Analytics Server

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

1) Sign in to Oracle Analytics Server as a member of the WebLogic BIAdministrator group.
2) In the upper right of the screen, click **Administration** .
3) Under **Maintenance and Troubleshooting**, click **Reload Files and Metadata**.

Adding Users to Primavera Analytics with Oracle Analytics Server

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 Analytics Server in order for them to access to the Primavera Data Warehouse schema through Oracle Analytics Server.

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

To do this, complete the following steps:

1) Sign in to Oracle Analytics Server with WebLogic Administrator credentials. For example, *weblogic*:

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

   where:

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

   `<port>` is the listening port number for Oracle Analytics Server.

   `/em` is the default context for Oracle Analytics Server 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 **OAS**.
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, *BIConsumer*, *BIContentAuthor*, or *BIServiceAdminstrator*.
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 Oracle Analytics Server.
15) Sign out of Oracle Analytics Server.

Optional Installation Procedures

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

In This Section

Deploying the D3 Library with Oracle Analytics Server

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 Oracle Analytics Server. For more information on D3, please see https://d3js.org/.

To deploy the D3 library on Oracle Analytics Server, complete the following steps:

1) 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\za01ic\war\res`
   where `<DOMAIN_HOME>` is the Oracle Analytics Server domain.
   For example, `C:\Oracle\Middleware\Oracle_Home\user_projects\domains\bi`.
4) Restart Oracle Analytics Server.

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 Analytics Server 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 Oracle Analytics Server Admin tool for the RPD.

Prerequisites

- Oracle Analytics Server is installed. For supported versions, refer to the *Analytics Tested Configurations* document.
- UDML can be made available upon request by contacting Oracle Support.

Procedure

To generate a new RPD:

1) On the machine with Oracle Analytics Server installation, copy the UDML file, and the `primavera_analytics_rpd.udml`, from the `<Primavera unzipped directory>\P_R2412_ANALYTICS\P_R2412_A\obi\12c\rpd` 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 `<OAS_HOME>\bi\bifoundation\server\bin` folder.
3) For Windows installations, run the following command:

   ```
   nqudmlexec.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 Oracle Analytics Server

Data Visualization combines new content creation UI with the ability to upload and join external data to existing Primavera Analytics sources (P6 EPPM andUnifier). Primavera Analytics includes sample projects that demonstrate some of the capabilities of Data Visualizer.

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

- Oracle Analytics Server For supported Oracle Analytics Server version, refer to the *Tested Configurations* document.

To import the data visualization samples into Oracle Analytics Server, complete the following steps:

1) Sign in to Oracle Analytics Server 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 Oracle Analytics Server is installed and running.

   `<port>` is the listening port number for Oracle Analytics Server.

`/analytics` is the default context for Oracle Analytics Server.

2) At the upper right of the screen, click **Catalog** to open the deployed Oracle Analytics Server catalog.
3) At the upper left of the screen, in the **Catalog** window, click the **Shared Folders** 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 Analytics Server. 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 (sample_wo_list.xlsx), complete the following steps:

1) Complete the Create a Dataset from a File Uploaded from Your Computer procedure.
2) In the **Upload a File** form, click **Add XSA**.
3) At the top of the screen, click the **Home icon**.
4) At the left of the screen, under the **Display** menu, click **VA Projects**.
5) Click the **Data Mashup Example** VA Project.
6) At the upper left of the screen, click the **Data Sources** icon.
7) At the lower left of the screen, click **Source Diagram**.
8) 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.
9) 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.

10) 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 from version 22 or version 23 to Primavera Analytics Version 24. This allows the new content available in Primavera Analytics Version 24 to be installed while preserving any custom changes you may have made to your existing Repository Definition (.rpd) file. To upgrade the Primavera Analytics Repository Definition (.rpd) file and the Oracle Analytics Server catalog, complete the procedures in this section.

In This Section

Upgrading the Oracle Analytics Server Catalog

To upgrade the Primavera Analytics sample catalog from version 22 or version 23 to Primavera Analytics Version 24, complete the following steps on the server where Oracle Analytics Server is installed:

1) Back up your existing catalog.
2) Sign in to Oracle Analytics Server 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 Oracle Analytics Server is installed and running.

   `<port>` is the listening port number for Oracle Analytics Server.

   `/analytics` is the default context for Oracle Analytics Server.
3) In the menu bar, select **Catalog** to open the deployed Oracle Analytics Server 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: T**o 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 Oracle Analytics Server

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

> **Note**: Complete this procedure only if you have upgraded your Oracle Analytics Server environment.

1) Sign in to Oracle Analytics Server 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 Oracle Analytics Server is installed and running.
   `<port>` is the listening port number for Oracle Analytics Server.
   `/analytics` is the default context for Oracle Analytics Server.
2) In the menu bar, select **Catalog** to open the deployed Oracle Analytics Server 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 Oracle Analytics Server.

Upgrading the Repository Definition File (.rpd)

To upgrade the Primavera Analytics Repository Definition file (.rpd) from version 22 or version 23 to Primavera Analytics Version 24, complete the following steps on the server where Oracle Analytics Server is installed:

1) Go to the `<Primavera Analytics unzipped directory>\obi\12c\rpd` directory.
   For more information on supported Oracle Analytics Server versions, refer to the *Tested Configurations* document.
2) Copy the `OraclePrimaveraAnalytics.rpd` file to a local folder on the server where you installed Oracle Analytics Server. 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) To download the currently deployed Repository Definition file, run the following commands:
   On Windows, run the following command:

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

   On Linux or UNIX, run the following command:

```
datamodel.sh downloadrpd –O C:\Temp\OraclePrimaveraAnalytics
current.rpd –W <repository password> –U <username> –P <password> –SI
<service instance>
```

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) To equalize your current RPD with the new RPD, run the following commands:

On Windows, run `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>`

On Linux or UNIX, run `equalizerpds.sh –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) To generate a patch file with the differences between your existing RPD and the new equalized RPD, run the `comparerpd.cmd` or `comparerpd.sh` commands:

On Windows, run

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

On Linux or UNIX, run

`comparerpd.sh –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) to patch the existing Repository Definition file, run the `biserverxmlexec.cmd` or `biserverxmlexec.sh` command:

On Windows, run

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

On Linux or UNIX, run

biserverxmlexec.sh –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 `datamodel.cmd` command (with Windows) or the `datamodel.sh` command (with UNIX or Linux) to upload the patched Repository Definition file, as follows:

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

   For example:

   ```
   datamodel.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 Oracle Analytics Server 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 Oracle Analytics Server is installed and running.

   `<port>` is the listening port number for Oracle Analytics Server.

   `/em` is the default context for Oracle Analytics Server Enterprise Manager.

10) Upon signing into Oracle Analytics Server 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 Oracle Analytics Server.
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 Oracle Analytics Server deployment. When the confirmation window appears, click **Yes**. When the Oracle Analytics Server 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**.