

# Oracle® Enterprise Performance Management System Deployment Options Guide



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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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# 1

## About Deployment Options

This guide provides procedures for additional optional deployment options. Use the procedures in this guide only after you have completed an initial installation and configuration of Oracle Enterprise Performance Management System products.

Check the [Oracle Documentation Library \(http://www.oracle.com/technology/documentation/epm.html\)](http://www.oracle.com/technology/documentation/epm.html) on Oracle® Technology Network to see whether an updated version of this guide is available.

# 2

## Scaling EPM System Products

Most Oracle Enterprise Performance Management System components support clustering in active-active configurations to remove single points of failure from the architecture, maintain consistent performance through load balancing, or both.

When you are deploying Java web applications on a machine other than the machine hosting Oracle Hyperion Foundation Services, WebLogic Server Administration Server must be running on the Foundation Services host machine. If you are deploying on the same machine as Foundation Services, WebLogic Server Administration Server does not need to be running.

### Clustering Java Web Applications

This section assumes that you are familiar with WebLogic administration and clustering. If you are unfamiliar with these tasks, Oracle urges you to seek technical assistance before attempting to cluster an Oracle Enterprise Performance Management System Java web application.

#### Prerequisites



#### Note:

The information in this section assumes that you have installed your Java web applications on each node to be included in the cluster.

Complete these tasks before setting up a cluster for an EPM System Java web application:

- When scaling Oracle Hyperion Foundation Services, you must create a new schema using RCU and edit `RCUSchema.properties` on each machine in the deployment. For information, see "Creating Infrastructure Schemas Using Repository Creation Utility" and "Updating RCU Schema Properties" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.
- When you are deploying on a machine other than the machine hosting Foundation Services, WebLogic Server Administration Server must be running on the Foundation Services host machine. If you are deploying on the same machine as Foundation Services, WebLogic Server Administration Server does not need to be running.
- Enable either session persistence or sticky sessions (which direct all requests for a specific session to the same server) on the load balancer.
- In distributed systems (where Oracle Essbase is installed on a different server than Oracle Hyperion Profitability and Cost Management), Oracle Hyperion Provider Services must also be installed and configured on the Profitability and Cost Management server. This is a requirement even when your configuration supports using Embedded mode for Essbase connections. In clustered systems (where more than one Profitability and Cost



Management managed server is installed), Provider Services must also be installed and configured on each Profitability and Cost Management managed server node.

- Install the EPM System product on each node that the cluster will include. Install to the same file system location on each machine. Using the same file system path on each physical machine in a cluster is important so that these environment variables can be set once for the entire cluster, rather than set and customized for each node in the cluster:

All OS—`CLASSPATH` and `PATH`

### Clustering Java Web Applications Using EPM System Configurator

You can cluster EPM System Java web applications during configuration with EPM System Configurator. Use the following general configuration sequence. This procedure assumes that the Oracle HTTP Server installed by EPM System Installer is the logical host.

#### Note:

When Profitability and Cost Management is scaled within a clustered environment, each module within the Profitability enterprise application must be targeted to all of the servers within the Profitability cluster.

To cluster EPM System Java web applications during configuration with EPM System Configurator:

1. Install EPM System Java web applications on each machine in your environment.
2. Configure the Java web application on the first machine, selecting **Deploy to Application Server** on the EPM System Configurator Task Selection page.

During deployment, EPM System Configurator creates a cluster for each managed server in WebLogic.

3. Configure the Java web application on the next machine, selecting **Deploy to Application Server** on the EPM System Configurator Task Selection page.

During deployment, EPM System Configurator adds the server to the cluster in WebLogic.

Repeat this step for any additional machines in the deployment.

4. Configure the web server last, selecting **Configure Web Server** from the Foundation tasks on the EPM System Configurator Task Selection page. Then, restart the web server and Oracle Hyperion Enterprise Performance Management Workspace.

Considerations about clustering Java web applications:

- EPM System Configurator configures a cluster for each managed server.
- You should have only one cluster for each EPM System product. Note that EPM System Configurator creates a cluster for each managed server.

### Scaling Out a Single Managed Server

To scale out the single managed server on subsequent machines:

1. Using EPM System Installer, install the same set of Java web applications on any additional machines in the environment. Note that you cannot add or remove Java web applications when you scale out.
2. Run EPM System Configurator from each machine to which you are scaling out.
3. On the Task Selection panel under Hyperion Foundation, select **Scale out single managed server on this machine**.

The **Scale out single managed server on this machine** option is only available when the following are true:

- The WebLogic Administration Server is not installed on the current machine.
  - The single managed server is deployed on the WebLogic Administration Server.
  - The single managed server is not already scaled out on the machine.
4. Click **Next** to scale out the server.

When scaling Foundation Services, you must create a new schema using RCU and edit `RCUSchema.properties` on each machine in the deployment. For information, see "Creating Infrastructure Schemas Using Repository Creation Utility" and "Updating RCU Schema Properties" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

## Clustering Financial Management Servers

The following procedure is an overview of the recommended process for adding servers to the Oracle Hyperion Financial Management environment, defining clusters, and adding servers to the clusters.

To cluster servers in your Financial Management environment:

1. After you install Financial Management on a new server or servers, run EPM System Configurator on all new servers and select the **Configure Server** task and the **Configure Database** task.
2. Run EPM System Configurator on any one application server and select the **Configure Application Clusters** task to define clusters and to add servers to or remove servers from clusters.
3. Restart the Oracle Hyperion Foundation Services Java web application and the web server.
4. In Oracle Hyperion Enterprise Performance Management Workspace, register each application against the preferred cluster.

## Clustering Data Management

This section discusses clustering Data Management product components outside EPM System Configurator. See [Clustering Java Web Applications Using EPM System Configurator](#) for information about clustering Oracle Hyperion Financial Data Quality Management, Enterprise Edition.

### Data Relationship Management Clusters

You can cluster Oracle Data Relationship Management web applications with either Oracle HTTP Server or third-party load balancers. For instructions on clustering with Oracle HTTP

Server, see "Configuring Load Balancing for Data Relationship Management Web Applications" in the *Oracle Data Relationship Management Installation Guide*.

With Data Relationship Management installed in a clustered database environment, you can select **Generate scripts to be run by a database administrator** when creating a database from the Repository Wizard in the Data Relationship Management Configuration Console. Two scripts are generated: one for creating the schema owner, or database, and one for creating the database schema objects. For instructions on clustering the Data Relationship Management repository, see the documentation for the database software being used.

You cannot cluster Data Relationship Management Servers.

## Configuring Essbase Clusters

This section discusses active-active clustering of Oracle Essbase Server. For information about clustering Oracle Essbase Administration Services Java web application and Oracle Hyperion Provider Services Java web application, see [Clustering Java Web Applications Using EPM System Configurator](#).

Active-passive clustering (Windows): See [Configure Essbase Servers in a Failover Cluster](#).

Active-passive clustering (Linux): See [Configure Essbase Servers in a Failover Cluster](#).

Active-passive clustering:

- Beginning with EPM Release 11.2.15 and later, Essbase no longer uses OPMN-based Clustering support. Essbase 21c does not support Microsoft Cluster Service integration. See [Configure Essbase Servers in a Failover Cluster](#) for more information on setting up an Essbase Active-Passive cluster. Installing and configuring Essbase should only be done on the first node if you are setting up a new Active-passive cluster for Essbase. Essbase should not be configured using the EPM configuration tool; instead, Essbase should be installed using the EPM 11.2.15 installer.
- Essbase should only be upgraded on the master node when upgrading an existing Active-Passive Essbase cluster. Essbase should be manually uninstalled on the secondary node and then reinstalled using the 11.2.15 EPM installer.

### Note:

Essbase should not be configured using the EPM configuration tool on the secondary node. Starting with Release 11.2.15, Essbase can now contain more than two nodes in an Active-passive cluster. See [Configure Essbase Servers in a Failover Cluster](#) for more information on adding additional nodes to the cluster.

Active-active clustering: You can configure active-active Essbase clusters using Provider Services. Active-active Essbase clusters support high availability and load balancing. An active-active Essbase cluster supports read-only operations on the databases and should be used only for reporting. Because active-active Essbase clusters do not support data write-back or outline modification, and they do not manage database replication tasks such as synchronizing the changes in one

database across all databases in the cluster, they do not support Oracle Hyperion Planning. When Planning is configured to use Essbase in cluster mode as a data source, it does not support the ability to launch business rules with Oracle Hyperion Calculation Manager as the rules engine. See [Configure Active-Active \(Read-Only\) Essbase Clusters](#).

**Table 2-1 Essbase Server Clustering Configurations**

Capability	Active-Passive (Windows)	Active-Passive (Linux)	Active-Active
Write-back	Yes	Yes	No
Failover	Yes	Yes	Yes
Load balancing	No	No	Yes
High availability	Yes	Yes	Yes

 **Note:**

- Beginning with EPM Release 11.2.15, Microsoft Cluster Service is no longer supported.
- See [Configure Active-Active \(Read-Only\) Essbase Clusters](#) for more information.

The following table describes an overview of the process of installing, configuring, and managing Essbase.

**Table 2-2 Installing, configuring, and managing Essbase**

Task	Reference
Install Oracle Enterprise Performance Management System products, including Essbase. Install Essbase locally on each node.	"Installing EPM System Products" in the <i>Oracle Enterprise Performance Management System Installation and Configuration Guide</i>

 **Note:**

Oracle recommends that the Oracle Hyperion Shared Services Registry database be on a different machine than Essbase.

**Table 2-2 (Cont.) Installing, configuring, and managing Essbase**

Task	Reference
Configure EPM System products, including Essbase. If you are implementing Essbase clustering (active-passive only), during configuration with EPM System Configurator, do the following: <ol style="list-style-type: none"> <li>On the first machine, use EPM System Configurator to set up the cluster:               <ul style="list-style-type: none"> <li>On the <b>Configure Essbase Server</b> page, for <b>Full path to application location (ARBORPATH)</b>, the location you specify must be a shared drive. The location must reside on a file system that is reachable by all Essbase servers in the cluster.</li> <li>For <b>Essbase Cluster Name</b>, specify the name for the cluster.</li> </ul> </li> <li>See <a href="#">Configure Essbase Servers in a Failover Cluster</a></li> </ol>	"Configuring EPM System Products" in the <i>Oracle Enterprise Performance Management System Installation and Configuration Guide</i>

### Configuring Active-Active Essbase Clusters

Using Provider Services, you can create active-active cluster of identical databases belonging to one Essbase server, to multiple Essbase servers on the same computer, or to Essbase servers distributed across multiple computers over the network.



#### Note:

Essbase servers may be subject to licensing restrictions.

Provider Services clients include Oracle Smart View for Office clients, custom Java application programming interface (API) clients, and XML for Analysis (XMLA) clients. Provider Services distributes client requests to database instances belonging to the cluster. An active-active Essbase cluster supports read-only operations on the databases; it does not support data write-back or outline modification. An active-active Essbase cluster does not manage database replication capabilities, such as synchronizing the changes in one database across all databases in the cluster.

### Configuring Active-Active Clusters with Provider Services

See [Configure Active-Active \(Read-Only\) Essbase Clusters](#)

### Adding Servers to Active-Active Essbase Clusters

See [Configure Active-Active \(Read-Only\) Essbase Clusters](#).

### Active-Active Essbase Clustering Examples

For simplicity, all examples in this section use Smart View.

### Essbase Server Clusters

Provider Services enables you to group sets of Essbase servers running applications with identical databases and use them as one resource.

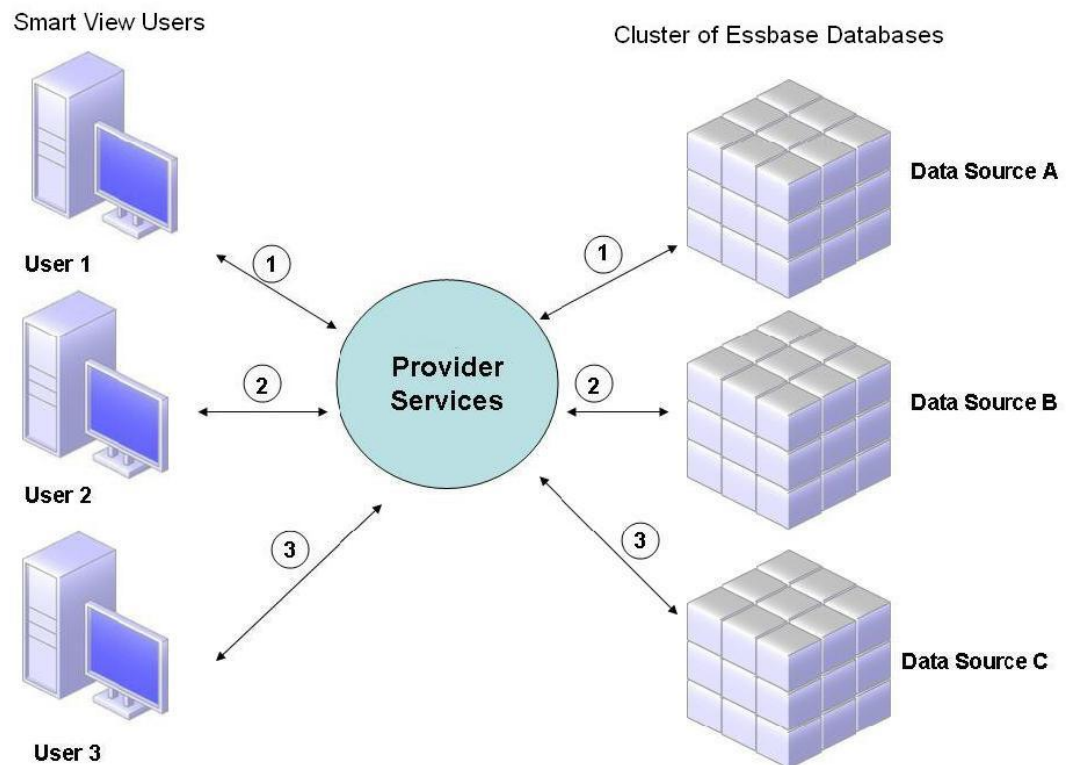
 **Note:**

When adding or deleting an Essbase server in a cluster, restart the server to reflect changes to the group. You can enable or disable components in the group without restarting the server.

### Essbase Database Clusters

Clustering Essbase databases enables load balancing and failover support. Provider Services provides parallel clustering, in which a series of active, duplicate databases respond to user requests. Which database is accessed is transparent to users, who connect to and retrieve data from one data source. Provider Services facilitates the routing of connections between databases in a cluster, based on availability and precedence rules.

**Figure 2-1 Essbase Database Clustering with Provider Services**



In [Figure 1](#), Smart View users connect to Essbase through Provider Services.

Each user connection is assigned to a server during the Essbase session. Provider Services uses session-level load balancing. For example, in [Figure 1](#), User 1's connection is mapped

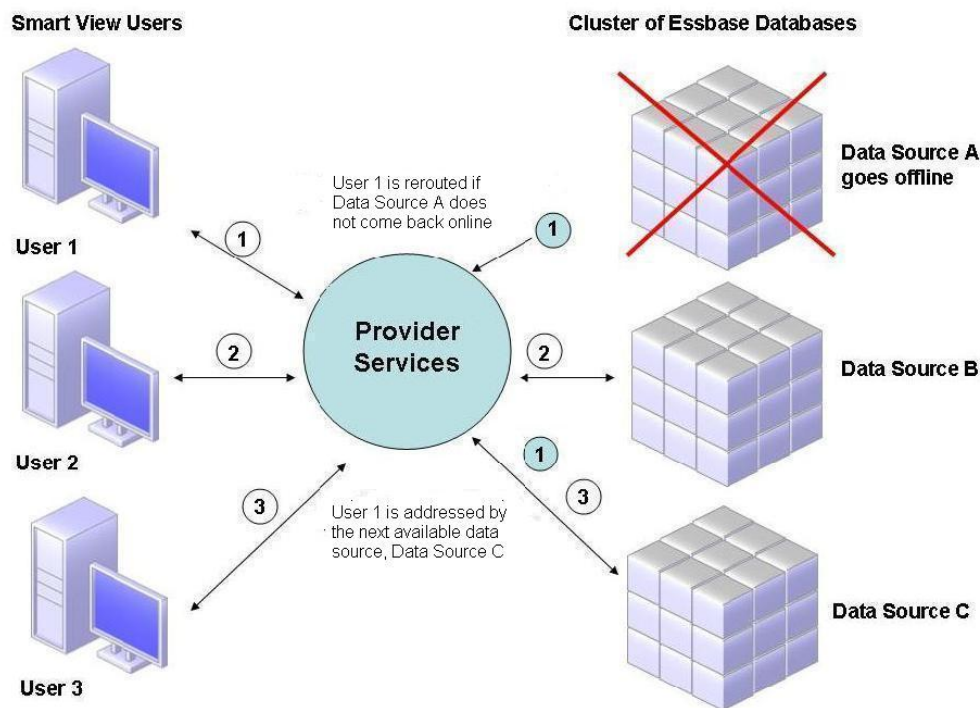
to Data Source A. User 2's connection is mapped to Data Source B. User 3's connection is mapped to data source C. All requests from User 1 are handled by Data Source A for the duration of the connection.

If data source A fails:

- User 1 times out at Data Source A.
- User 1 is rerouted to the next available data source, which is Data Source C in [Figure 2](#).

[Figure 2](#) illustrates what happens when Data Source A goes offline.

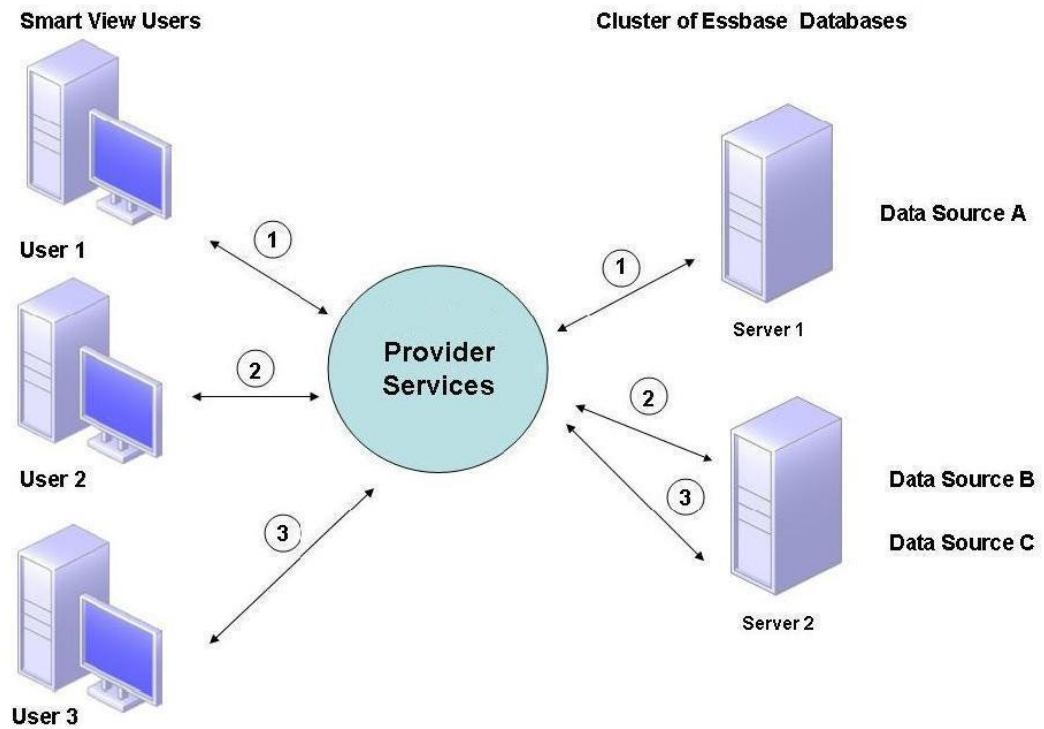
**Figure 2-2 Database Cluster with One Data Source Offline**



In [Figure 2](#), the state of query 1 is maintained at the middle tier and rerouted. Provider Services also provides load balancing across servers.

[Figure 3](#) depicts clustered databases deployed on one server.

Figure 2-3 Essbase Database Cluster on One Server

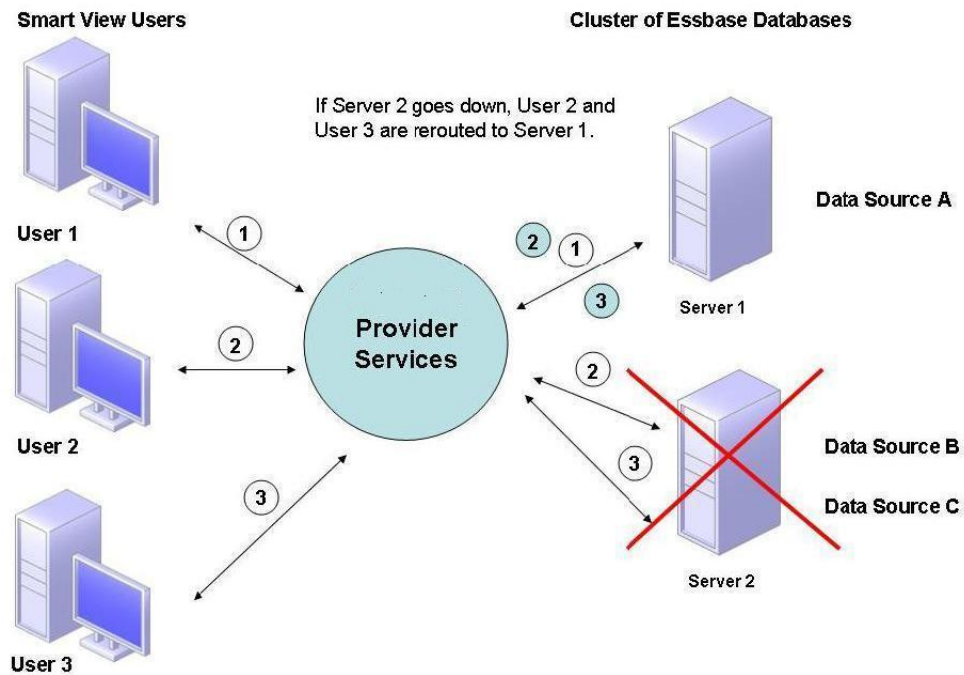


In [Figure 3](#), two servers contain Essbase databases. Server 1 has four processors and 8 GB of RAM. Server 2 has eight processors and 16 GB of RAM. Because Server 2 has more resources, it contains Data Sources B and C. Therefore, Server 2 can handle both connections.

Failover support also applies for database clusters on one server. In [Figure 4](#), Server 2 goes offline. User 2 and User 3 are then rerouted to the next available server, Server 1.



Figure 2-4 Failover for Database Cluster on One Server



### Connections to Essbase Clusters

Essbase clients and servers can connect to an Essbase cluster by way of a URL in this format:

```
http(s)://host:port/essbase/agent?ClusterName=clusterName
```

You can also connect to an Essbase cluster using only the cluster name, but you must first enable this by modifying a configuration file to specify the Provider Services server that resolves the cluster name in the URL.

Restart Essbase after updating these files.

To connect to a Provider Services active-active Essbase cluster using Oracle Hyperion Financial Reporting, you must configure Financial Reporting for three-tier mode.

To configure Financial Reporting for three-tier mode:

1. Start `MIDDLEWARE_HOME/EPMSysstem11R1/products/financialreporting/bin/FRConfig.cmd`.
2. Select the **MBeans** tab and browse to **com.hyperion/Financial Reporting/Attributes/EssbaseJAPIServer**.
3. Confirm that **EssbaseJAPIServer** is set as the Provider Services server.
4. Enter the Provider Services cluster name as the **Server Name** in the **Attribute value Value** box and then click **Refresh**.
5. Exit and restart Financial Reporting.

# 3

## Configuring Oracle Web Services Manager for EPM System Products

If you will be using Oracle Web Services Manager with Oracle Hyperion Financial Management, Oracle Hyperion Tax Provision, Oracle Hyperion Provider Services, or Oracle Data Relationship Management, perform the following steps, in order:

### Note:

You must perform these steps after installing and configuring Oracle Enterprise Performance Management System. Oracle Web Services Manager (OWSM) is automatically installed, but not deployed or configured with Oracle Hyperion Enterprise Performance Management Workspace. Ensure that you have already installed the Repository Creation Utility using EPM System Installer before you perform these steps. See "Creating Infrastructure Schemas Using Repository Creation Utility" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

- Manually deploy Oracle Web Services Manager (OWSM).
- Configure Oracle Web Services Manager (OWSM).
- Set up the keystore for message protection.
- Set up the Oracle Web Services Policy Manager to service requests.
- Configure the WebLogic domain to connect to Oracle Internet Directory, Microsoft Active Directory (MSAD), or SunOne.

After performing these steps, restart managed servers.

## Manually Deploying Oracle Web Services Manager

Oracle Web Services Manager (OWSM) is automatically installed, but not deployed or configured with Oracle Hyperion Enterprise Performance Management Workspace. Ensure that you have already installed the Repository Creation Utility using EPM System Installer before you perform this step. See "Creating Infrastructure Schemas Using Repository Creation Utility" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

To manually deploy OWSM:

1. Start Weblogic Server  
(\Oracle\Middleware\user\_projects\domains\EPMSystem\bin\startWeblogic.cmd), and then log in to the WebLogic Administration Console (`http://hostname:port/console`).
2. Create **mds-owsm** datasource:

- a. Click **Lock & Edit**.
  - b. In the **Domain Structure**, click **Data Sources**, and then on the **Configuration** tab, click **New**.
  - c. From the **New** list, select **Generic Data Source**.
  - d. Enter the JDBC Data Source properties, and then click **Next**.
    - **Name**—`mds-owsm`
    - **Scope**—Global
    - **JNDI Name**—`jdbc/mds/owsm`
    - **Database Type**—Oracle
  - e. Keep the default JDBC Data Source property for **Database Driver**, and then click **Next**.
  - f. Define the connection properties, and then click **Next**.
    - **Database name**
    - **Host Name**
    - **Port**
    - **Database User Name**—`SchemaPrefix_MDS`, where *SchemaPrefix* is the prefix that was provided in `RCUSchema.properties`.
    - **Password**—The `rcuSchemaPassword` that was provided in `RCUSchema.properties`.
  - g. On the **Targets** tab, select these clusters on which to deploy this data source, and then click **Save**.
    - **Admin Server**
    - **FoundationServices**—All servers in the cluster
    - **HFMWeb**—All servers in the cluster
    - **TaxManagement**—All servers in the cluster
  - h. Click **Release Configuration**.
3. Deploy `owsm-pm.ear`:
    - a. Click **Lock & Edit**.
    - b. In the **Domain Structure**, click **Deployments**.
    - c. On the **Configuration** tab, click **Install**.
    - d. For **Path**, enter  
`\Oracle\Middleware\oracle_common\modules\oracle.wsm.pm.`
    - e. Select `wsm-pm.ear` and then click **Next**.
    - f. Select **Install this deployment as an application** and then click **Next**.
    - g. Select deployment targets and then click **Next**.
      - **Admin Server**
      - **FoundationServices**—All servers in the cluster
      - **HFMWeb**—All servers in the cluster
      - **TaxManagement**—All servers in the cluster

- h. Keep the default selections for **Optional Settings**, and then click **Next**.
  - i. Review your choices and then click **Finish**.
  - j. Click **Save**.
  - k. Go to **Deployments** and click **wsm-pm**, which is in the **Prepared** state.
  - l. Click the **Control** tab.
  - m. Select **wsm-pm**.
  - n. Click **Start** and then select **Servicing all requests**.
  - o. Click **Save**.
  - p. Click **Release Configuration**.
4. Start Oracle Enterprise Performance Management System services using `start.bat` in `EPM_ORACLE_INSTANCE/bin`.

## Configuring Oracle Web Services Manager

Oracle Web Services Manager is automatically installed, but not configured, with Oracle Hyperion Enterprise Performance Management Workspace.

You must configure OWSM before you can use Web Services. Ensure that you have already installed the Repository Creation Utility using EPM System Installer before you perform this step. See "Creating Infrastructure Schemas Using Repository Creation Utility" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

To configure OWSM:

1. From the WebLogic Administration Services machine, select **All Programs**, then **Oracle WebLogic**, then **WebLogic Server**, then **Tools**, and then **Configuration Wizard**.
2. On the **Welcome** page, select **Extend an Existing WebLogic domain** to add new components to the existing EPM domain, and modify configuration settings.
3. Click **Next**.
4. On the **Update Domain Configuration Type** page, select **Update an Existing Domain**, ensure that the **Domain Location** is correct, and then click **Next**. For example, `C:\Oracle\Middleware\user_projects\domain\EPMSystem`.
5. On the **Templates** tab, ensure that **Oracle WSM Policy Manager** and **Oracle JRF** are selected, and then click **Next**.
6. On the **Configure JDBC Data Sources** page, modify the details for the JDBC data sources, as required, providing the password that you entered during RCU configuration, and then click **Next**.
7. On the **Test Data Sources** page, select the data sources to be tested, and then click **Test Connections**.  
  
If the connections are working, a check mark is displayed under **Status**. If the connections are not working, go back to correct the JDBC data source details, and rerun the test.
8. Click **Next**.
9. On the **Component Datasources Configuration** tab, select the **OWSM MDS** schema, enter details for the **OWSM\_mds** schema, and then click **Next**.

10. On the **JDBC Test** tab, select the component schema to be tested, and then click **Test Selected Connections**.

If the connections are working, a check mark is displayed and the **Connection Result Log** displays the results. If the connections are not working, go back to correct the JDBC data source details, and rerun the test.

11. Click **Next** through the remaining pages.
12. Restart the server machine, stop all Oracle Enterprise Performance Management System services, and then start WebLogic Administration Server Console.

## Enabling Oracle Web Services Policy Manager to Service Requests

To set up Oracle Web Services Policy Manager to service requests:

1. Log in to the WebLogic Administration Console using WebLogic administrator credentials. (`http:// WebLogic_Admin_Host:WebLogic_Admin_Port/console`).
2. Navigate to **Servers**, then **FoundationServices0**, then **Deployments**, then **wsm-pm**, and then **Control**.
3. Under **Start/Stop**, select **wsm-pm** and select **Start - Servicing All Requests** and then select **Yes**.

## Setting Up the Keystore for Message Protection



### Note:

This step is not required for Oracle Hyperion Financial Close Management and Tax Governance.

To set up the keystore for message protection:

1. First, create a keystore using the `keytool` command:

Go to `/Oracle/Middleware/user_projects/$DOMAIN_HOME/config/fmwconfig` in the server running the WebLogic Administration Server hosting your Oracle Enterprise Performance Management System domain and execute the following command:

```
keytool -genkeypair -keyalg RSA -alias aliasName -keypass password -  
keystore keystoreName.jks -storepass password -validity 3600
```

 **Note:**

If the `keytool` command is not recognized, the `Path` environmental variable might not include JDK. Add the JDK to the `Path` variable using the following command: `set PATH=%PATH%;C:\Oracle\Middleware\JDK1.8.0_181\bin\;. ;.`

2. Next, set up message protection for Web Services:
  - a. Log in to Enterprise Manager (`http://WebLogicAdminServerHost:7001/em`) using WebLogic administrator credentials.
  - b. Expand **WebLogic Domain** and then select **EPMSystem** (or the domain name used for the EPM System deployment).
  - c. Right-click **EPMSystem**, select **Security**, and then select **Security Provider Configuration**.
  - d. Scroll to the **Keystore** section, expand the section, and then click **Configure**.
  - e. For **Keystore Path**, enter the path and name for the keystore that you created, for example `./EPMKeystore.jks`.
  - f. Enter the keystore password that you used when creating the keystore and confirm it.
  - g. Enter an alias and password for both **Signature Key** and **Encryption Key**, using the alias and password that you used when creating the keystore. Confirm the passwords, and then click **OK**. The alias and password for the signature and encryption keys define the string alias and password used to store and retrieve the keys.
3. Log out and restart Oracle Enterprise Manager Fusion Middleware Control so the changes take effect, and then restart EPM System managed servers.

## Configuring the WebLogic Domain to OID, MSAD, SunOne

This procedure is required to configure the WebLogic domain, or in the case of Oracle Hyperion Financial Close Management or Oracle Hyperion Tax Governance, to communicate with an external provider, such as OID, MSAD, or SunOne. Oracle Hyperion Shared Services must also be configured to work with this external provider. Follow the sections specific to your provider.

 **Note:**

Financial Close Management and Tax Governance do not support Shared Services Native Directory. The Web Services features of Oracle Hyperion Profitability and Cost Management, Oracle Hyperion Provider Services, Oracle Hyperion Financial Data Quality Management, Enterprise Edition, and Oracle Hyperion Financial Management do not work with Shared Services Native Directory. See the *Oracle Hyperion Enterprise Performance Management System User and Role Security Guide* for more information.

To connect OID, MSAD, or SunOne to the WebLogic Server:

1. Log in to the WebLogic Administration Console if you are not already logged in.

2. Click **Security Realms** on the left, click **myrealm**, and then click the **Providers** tab.
3. Click **Add**, enter the following details, and then click **OK**.

For OID:

- Name - **OID**
- Type - **OracleIntenetDirectoryAuthenticator**

For MSAD:

- Name - **MSAD**
- Type - **ActiveDirectoryAuthenticator**

For SunOne:

Name - **SunOne**

You can ignore the prompt to restart the server; you will be restarting at the end of this procedure.

4. Click the provider you just added, click the **Provider Specific** tab, enter the following details for your provider, and then click **Save**.
  - Host
  - Port
  - Principal
  - Credential
  - User Base DN
  - Group Base DN
  - User from Name Filter (MSAD only)
  - User Name Attribute (MSAD only)

You can leave the rest of the default values unchanged.

5. Click **OID**, **MSAD**, or **SunOne**, and for **Control Flag**, select **SUFFICIENT**.
6. Restart WebLogic Server.

**Note:**

When configuring the external provider in Shared Services, make the provider a trusted source to ensure that SSO works.

**Note:**

For more information on updating the domain configuration, see [Update the Domain Configuration](#).

# Financial Close Management and Tax Governance Configuration Options

## Configuring Financial Close Management or Tax Governance for OAM

If you are using Microsoft SQL Server or Oracle Database and OAM for single sign-on, perform the following procedure:

1. Log in to the WebLogic Administration Console using WebLogic administrator credentials. ([http://WebLogic\\_Admin\\_Host:WebLogic\\_Admin\\_Port/console](http://WebLogic_Admin_Host:WebLogic_Admin_Port/console)).
2. In the Domain Structure portlet, click **Security Realms**.
3. From the available realms, click the realm name with **Default Realm** status `True`.

 **Tip:**

Click the realm name, not the check box.

4. Select the **Providers** tab to list all configured Authentication/Assertion providers.
5. Under Authentication Providers, click **New**.
6. Select **OAMIdentityAsserter** from the list of supported Authentication/Assertion providers, and then in the **Create a New Authentication Provider** panel, specify a name for the provider, such as **OAMIdentityAsserter**, and then click **OK**.

**OAMIdentityAsserter** is now listed in the list of configured providers.

7. Reorder the providers in the following order:
  - MSAD, OID, or SunOne, depending on which provider you are using
  - OAM IdentityAsserter
  - Default Authenticator
  - Default IdentityAsserter



# 4

## Changing a Deployment

EPM System Configurator enables you to reconfigure products to incorporate changes in your environment.

To reconfigure, launch EPM System Configurator on the computer hosting the product, and follow the procedures in "Configuring EPM System Products" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

### Changing Ports

For most Oracle Enterprise Performance Management System components, you change the port using EPM System Configurator. See the "Ports" appendix in *Oracle Enterprise Performance Management System Installation and Configuration Guide* for details.

If you reconfigure to change a port or server, you must also reconfigure the web server (under the Oracle Hyperion Foundation Services tasks in EPM System Configurator).

### Changing Database Passwords

For Oracle Enterprise Performance Management System products that require a database repository, when you change a database password, for example to comply with your company's password change policy, you must update the Oracle Hyperion Shared Services Registry so that EPM System components can connect to the database using the new password.

#### Assumptions and Prerequisites

- You installed and configured EPM System products using the *Oracle Enterprise Performance Management System Standard Deployment Guide* or the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.
- You made a backup of the database.
- Using the database administration console, you changed the password of the user account that was used to configure the Shared Services Registry or product repository database.
- In a single-machine deployment, or in a distributed deployment in which you run EPM System Configurator from the Oracle Hyperion Foundation Services machine, WebLogic Administration Server must be stopped.
- In a distributed environment, when you run EPM System Configurator from a machine other than the Foundation Services machine, WebLogic Administration Server must be running.

#### Changing the Shared Services Registry Database Password

To update the database password for the Shared Services Registry database:

1. Stop EPM System Java web applications, services, and processes.

2. On the machine hosting Oracle Hyperion Shared Services, change to `EPM_ORACLE_INSTANCE/bin` and launch `configtool.bat|.sh`.
3. On the "Shared Services and Registry Database Configuration" page, select **Connect to a previously configured Shared Services database** and enter the new database password.
4. On the Task Selection page, if other products use the Shared Services database, select the **Configure Database** tasks for those products.
5. If you selected any other products, on the "Database Configuration" page, enter the new database password.
6. If you are prompted to choose whether to **Drop and recreate tables** or **Reuse the existing database**, select **Reuse the existing database**.
7. Continue the configuration, and click **Finish** when you are done.
8. Restart WebLogic Administration Server if it is down, the Java web applications, services, and processes.
9. If you are working in a distributed environment, repeat the steps to configure the Shared Services Registry database on each machine in the deployment.

### Changing EPM System Component Repository Database Passwords

To change the database password for EPM System components other than Shared Services:

1. Stop EPM System Java web applications, services, and processes.
2. From the machine hosting the component whose database password changed, change to `EPM_ORACLE_INSTANCE/bin` and launch `configtool.bat|.sh`.
3. On the Task Selection page, select **Configure Database** for all the products in this instance whose database password has changed.

#### Note:

- If you change the password for the Oracle Hyperion Financial Management database schema, you must also select the **Deploy to Application Server** in addition to **Configure Database** task.
- If the Financial Management server is configured to use SSL for database connections, after running the **Configure Database** task for HFM, you will need to update the EPM registry again following the steps listed in [Configuring HFM server to use SSL database connections](#). Note that either the Registry report or the EPM Deployment report can be reviewed to confirm the location of the `ODBC_TRUSTSTORE` file.

4. Enter the new password.
5. When you are prompted to choose whether to **Drop and recreate tables** or **Reuse the existing database**, select **Reuse the existing database**.
6. Continue the configuration, and click **Finish** when you are done.
7. Restart WebLogic Administration Server if it is down, the database, the Java web applications, services, and processes.

### Changing the Data Relationship Management Repository Password

To change the Oracle Data Relationship Management repository password for an application:

1. Stop Data Relationship Management.
2. In the database, change the password.
3. Open the Data Relationship Management console.
4. Go to **Configuration**.
5. Select the appropriate application using the arrow controls.
6. In **Repository Configuration**, enter the new password.
7. To test the new password, click **Test Connection**.  
You should see the message "Connection Succeeded!"
8. Click **Save Configuration** to commit the new password, in encrypted form, to the configuration file.
9. Restart the application or the Data Relationship Management service.

### Validating the Database Password Changes

To validate the database configuration changes:

1. Launch Oracle Hyperion Enterprise Performance Management System Diagnostics using one of the following methods:
  - (Windows) In `/bin`, double-click `validate.bat`.
  - From the Start Menu, choose **Programs**, then **Oracle EPM System**, then **Foundation Services**, then `instanceName`, and then **EPM System Diagnostics**.
  - (Linux) From a console, change to `/bin`, and then enter `validate.sh`.Progress is shown in the command window.
2. To view results, navigate to `/diagnostics/reports` and open `validation_report_date_time.html`.

## Changing Planning Passwords with a Utility

A Oracle Hyperion Planning utility called `SetDBNEssbasePassword` enables you to set database and Oracle Essbase passwords for a list of applications you provide. You must provide application names as a comma-separated list enclosed in quotation marks and without spaces.

Launch the utility using this syntax at the command line:

```
SetDBNEssbasePassword /U:<username> /A:"<application names in comma-separated list enclosed in quotation marks and without spaces>"
```

`SetDBNEssbasePassword.cmd` uses these arguments:

- `/U:admin`
- `/A:"Application names comma-separated without spaces"`

When the utility is launched:

1. It prompts login password for the user.
2. It prompts Enter database password: which is the new DB password that needs to be set
3. It prompts Enter Essbase password: which is the new Essbase password that needs to be set.

Then it confirms that the application password reset is complete:

```
Reset of database and Essbase passwords for app ApplicationName  
is successful.
```

If an invalid application is provided or an application name with a space in the comma separated list is provided, it will prompt for the new passwords but will fail and display the following message:

```
Unable to find application entry for app ApplicationName.  
Skipping...
```

After running the utility, you must restart Planning for the password changes to take effect.

## Changing RCU Passwords

To change the schema password for RCU components, you change the password in the database.

For example, to change the password of the schema VBC\_STB:

1. Stop services:
  - Oracle Enterprise Performance Management System services
  - Node Manager Windows Service and Oracle HTTP Server, if you are using Oracle HTTP Server as your web server
  - WebLogic Administration Server
2. Connect to the database using SQL\*Plus. Connect as a user with SYSDBA privileges.
3. Follow the steps to change the schema password for Oracle Platform Security Services. See [Changing the Schema Password for Oracle Platform Security Services](#).
4. Issue the following command:

```
SQL> ALTER USER schema IDENTIFIED BY new_password;  
COMMIT;
```

For example, to change the VBC\_STB password to abc123 where VBC is simply an example of the RCU (Repository Creation Utility) prefix used on the first Foundation server configuration in the environment as mentioned in the topic [Updating RCU Schema Properties](#):

```
SQL> ALTER USER VBC_STB IDENTIFIED BY abc123;  
COMMIT;
```

For SQL Server, issue the following command:

```
ALTER LOGIN user WITH PASSWORD = new_password;
```

 **Note:**

All RCU Components must be updated with the same password.  
(Schemas to change for RCU components: VBC\_IAU; VBC\_IAU\_APPEND;  
VBC\_IAU\_VIEWER; VBC\_MDS; VBC\_OPSS; VBC\_STB; VBC\_UMS; VBC\_WLS;  
VBC\_WLS\_RUNTIME)

## Changing the Schema Password for Oracle Platform Security Services

To change the schema password for Oracle Platform Security Services:

1. Connect to the database using SQL\*Plus. Connect as a user with SYSDBA privileges.
2. Issue the following command:

```
SQL> ALTER USER schema IDENTIFIED BY new_password;  
COMMIT;
```

Be sure to issue the commit command before proceeding to step 3.

For SQL Server, issue the following command:

```
ALTER LOGIN user WITH PASSWORD = new_password;
```

3. Run the WLST command `modifyBootStrapCredential` to update the JPS configuration file.
  - a. Invoke WLST from the following directory:

```
ORACLE_HOME/oracle_common/common/bin/wlst.sh
```

- b. Specify the full path to the JPS configuration file in the `modifyBootStrapCredentials` command. For example:

```
modifyBootStrapCredential(jpsConfigFile='C:/Oracle/Middleware/  
user_projects/domains/EPMSysstem/config/fmwconfig/jps-  
config.xml',username='VBC_OPSS',password='password1')
```

At this point, the Administration Server can be started, however, the log file will show an exception.

- c. When you change the Repository schema password, you must change the password for the corresponding Repository data source, using either Weblogic Console or Oracle Enterprise Manager Fusion Middleware Control. Log in to Oracle Enterprise

Manager Fusion Middleware Control (for example, <http://WebLogicAdminServerHost:7001/em>) using WebLogic administrator credentials.

- i. From the WebLogic Domain menu, select **JDBC Data Sources**.
- ii. Edit each of the following five data sources and update the password:
  - i. LocalSvcTblDataSource
  - ii. opss-audit-DBDS
  - iii. opss-audit-viewDS
  - iv. opss-data-source
  - v. WLSSchemaDataSource
- iii. Select the **JDBC Data Source Name**:
  - i. Click the **Configuration** tab, then the **Connection Pool** tab.
  - ii. For **Password**, enter the new password and confirm.
  - iii. Select "Test Database Connection" to verify the update.
  - iv. Click **Save**.
  - v. Update all the five data sources.
  - vi. Select **Activate Changes**.
  - vii. Restart Weblogic Administration Server.
  - viii. Start EPM Services.

# 5

## Updating the Shared Services Registry

You can edit the Oracle Hyperion Shared Services Registry using a command line utility. Use this utility only if you are unable to make the required changes to the Shared Services Registry using EPM System Configurator.



### Tip:

You can make most changes using EPM System Configurator. For example, to make changes to a deployed Java web application, you can select the "Configure Logical Address for Web Applications" task in EPM System Configurator to make changes without having to redeploy the Java web application. See the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

You use the `epmsys_registry.bat` utility (`epmsys_registry.sh` on Linux) to make any required changes to the Shared Services Registry.

## Understanding the Shared Services Registry Component Hierarchy

To make corrections to the Oracle Hyperion Shared Services Registry, you have to understand its structure. During configuration of 11.1.x products, EPM System Configurator automatically updates the Shared Services Registry with components for each product. Components also have child components, creating a hierarchy. Each component of the hierarchy has its own component properties. You need to know both the component names and the component property names to update the Shared Services Registry.

For example, the `ESSBASE_PRODUCT` component includes the following component properties:

- `host`
- `agent_PortNumber`

To find the component property names and child components for any component, you can use a command to view the component in the Shared Services Registry. See [Viewing the Components in the Shared Services Registry](#).

## Editing the Shared Services Registry

To edit the Oracle Hyperion Shared Services Registry:

1. Back up the Shared Services Registry.

2. On a machine hosting the 11.1.x Oracle Enterprise Performance Management System software, go to `/bin` and run the following command:

```
epmsys_registry view componentType
```

You need to view the component hierarchy to get the component property names that required to delete a component or update a component property.

For information see [Viewing the Components in the Shared Services Registry](#).

3. Depending on the required changes, refer to the following commands:

To delete a component, see [Deleting a Component Instance](#).

To update a component property, see [Updating a Component Property](#).

 **Note:**

When you run `epmsys_registry` commands on Linux, all # must be preceded by \.

4. If you changed the `LOGICAL_WEB_APP` property for any product, run EPM System Configurator and configure the web server again. (On the Task Selection page, select the Oracle Hyperion Foundation Services Web Server Configuration task.)

### Viewing the Components in the Shared Services Registry

Before you can delete a component or update a component property, you need to view the component hierarchy to get the component property names and values.

To view the component hierarchy:

1. Go to `/bin` and use the following command:

```
epmsys_registry view componentType
```

where *componentType* is the name of the component in the Shared Services Registry.

This command displays all the components in the specified hierarchy, displaying only the immediate children of the component. The information is displayed in the console.

For example, to view all the components in the `PLANNING_PRODUCT` hierarchy, run:

```
epmsys_registry view SYSTEM9/PLANNING_PRODUCT
```

2. If needed, repeat the command to get the property names for a subcomponent.

For example, `LOGICAL_WEB_APP` is a child of `PLANNING_PRODUCT`. To view the properties for `LOGICAL_WEB_APP` for Oracle Hyperion Planning, enter the following command:

```
epmsys_registry view SYSTEM9/PLANNING_PRODUCT/LOGICAL_WEB_APP
```



3. From the display, note the following information about components you want to delete or update:

- Component ID for any components you want to delete or update
- Component property names and values for any components you want to update

For example, the `LOGICAL_WEB_APP` for Planning has several properties, including `context`, `port`, and `host`.

### Deleting a Component Instance

You delete a component instance by referring to the component's ID that is displayed when you view the component hierarchy.

To delete a component from the component hierarchy, go to `/bin` and run the following command:

```
epmsys_registry deletecomponent #componentID
```

where `componentID` is the component's ID that you found when you viewed the component hierarchy.

On Linux, run:

```
epmsys_registry.sh deletecomponent \#componentID
```

Deleting a node does not delete its children.

#### Tip:

If you are deleting a product node, first delete all the children of the node and then delete the product node.

#### Caution:

Ensure that you delete the correct component.

### Updating a Component Property

You update a component property by referring to the component ID and the component property name that are displayed when you view the component hierarchy.

To update a component property, go to `/bin` and run the following command:

```
epmsys_registry updateproperty #componentID/@componentProperty value
```

where `componentID` is the component's ID you found when you viewed the component hierarchy, `componentProperty` is the component property name you want to update, and `value` is the new value for the component property.

On Linux, run:

```
epmsys_registry.sh updateproperty \#componentID/@componentProperty  
value
```

Component property names are case sensitive.

 **Tip:**

Look for the component property names in the section called "Properties" when you view the component hierarchy. In addition, you can update the host a component is running on using the property name "host."

For example, to change the port number for the Oracle Essbase Server with the component ID 99999 to port number 1425, enter the following command:

```
epmsys_registry updateproperty #99999/@agent_PortNumber 1425
```

### Viewing Host Entries in the Shared Services Registry

You can view the host entries in the Shared Services Registry.

You can use this command for a number of purposes. For example, use the command to:

- Simplify the rehosting process
- Simplify the process of changing server names to alias names
- Debug server communication issues

To view the host entries in the Shared Services Registry, go to `/bin` and run the following command:

```
epmsys_registry viewhosts
```

The displays shows the server names for this machine as they are stored in the Shared Services Registry in one column and the hostname as resolved by the DNS in another column

 **Tip:**

If the names in the columns do not match, either resolve the DNS entries or create a hosts file to match the resolved names.

# 6

## Using Enterprise Manager to Monitor EPM System Java Web Applications

EPM System Configurator deploys Oracle Enterprise Manager automatically when it deploys the first Java web application.

Oracle Enterprise Manager Fusion Middleware Control can be used to manage the WebLogic domain. You can use this embedded Enterprise Manager to manage all the Java web applications in EPM System out of the box. The full version of Enterprise Manager with Grid Control adds functionality on top of the Fusion Middleware Control, including historical information of the metrics.

- Status of the servers and Java web applications running
- Servers the Java web applications are running on and the ports they are listening on
- Health and performance of Java web applications and managed servers (select the server you want to monitor and navigate to WebLogic Server and then Performance Summary to view the available categories of metrics)

To launch Enterprise Manager, go to `http://WebLogicAdminServerHost:port/em`.

# 7

## Uninstalling EPM System

To uninstall this release of Oracle Enterprise Performance Management System products, follow this workflow:

1. Use EPM System Uninstaller to remove binaries. [Uninstalling EPM System Products](#). You can also silently uninstall EPM System components.
2. Uninstall EPM System clients. See [Uninstalling EPM System Clients](#).
3. If you are not using the remaining content in Middleware Home for other products, run the uninstallers for Oracle HTTP Server, WebLogic Server, `oracle_common`, and Oracle Database clients by using Add/Remove programs, or use the product uninstallation shortcuts.

### Uninstalling EPM System Products

When you uninstall Oracle Enterprise Performance Management System products, EPM System Uninstaller removes the binaries from the installation location. Use uninstall when you want to completely remove components that are not in use any more in any instance in the deployment.

#### **Caution:**

When you uninstall EPM System products, EPM System Uninstaller removes everything from the installation directory. Before you uninstall, be sure to back up any files you want to keep. For information about backing up files, see *Oracle Enterprise Performance Management System Backup and Recovery Guide*.

To uninstall EPM System products:

1. Ensure that no EPM System processes are running.
2. Choose a method to launch the uninstaller:
  - (Windows) In `epm_oracle_home/uninstall`, double-click `uninstall.cmd`.
  - (Windows) In the Windows Control Panel, select **Oracle EPM System** to remove/uninstall.
  - (Windows) From a Windows console, change to `epm_oracle_home/uninstall/`, and then enter `uninstall.cmd`.
  - From the **Start** menu, select **Programs**, then **Oracle EPM System**, and then **Uninstall EPM System**.
  - (Linux) Change to the `/uninstall` directory and enter `./uninstall.sh`.
  - (Linux) Change to the `/uninstall` directory and enter `./uninstall.sh -console`.
3. Exit other programs before you continue, and then click or select **Next**.

4. Select the products to uninstall, and then click or select **Next**. All components on the same tier of the selected products are uninstalled.

For example, if you uninstall any Oracle Hyperion Financial Management web component, EPM System Uninstaller uninstalls all Financial Management web components.

All installed products are selected by default. Select "**Uncheck all**" to clear the selections for all products, and then select only the products you want to uninstall.

5. Specify whether you want to delete all the files and directories in the EPM Oracle Home directory.

If you select this option, data and customized files are deleted.

6. Confirm the products to uninstall, and then click or select **Next**.

EPM System Uninstaller displays progress incrementally as each assembly's uninstallation is complete.

 **Note:**

To cancel the uninstallation, click or select Cancel. When you select Cancel, EPM System Uninstaller stops the uninstallation of the current assembly and rolls that assembly back to an installed state. It does not undo uninstallations for assemblies that were already uninstalled.

EPM System Uninstaller indicates the success or failure of the uninstallation. If any part of the uninstallation failed, EPM System Uninstaller notes which assembly failed to uninstall. Check the log files for more information about the errors. You can find the log files in `epm_oracle_instance/diagnostics/logs/install`. There is a log file for each assembly, named `product-install.log`; for example, `hss-install.log`.

7. Click or select **Finish** to close EPM System Uninstaller.
8. On Windows, if you uninstalled Oracle HTTP Server, you must reboot to completely remove the installation. This step is required if you plan to reinstall.
9. Reboot after uninstalling EPM System products.

When uninstalling a client, select **Delete common components** in the **Setup Type** window only if you are deleting all EPM System clients that are installed on a machine. If multiple EPM System clients are installed on the same machine and you are deleting only one client, deselect **Delete common components**.

### Performing a Silent Product Uninstallation

Silent uninstallations automate the process so that you can uninstall EPM System products on multiple computers without manually specifying uninstallation settings on each machine.

To uninstall EPM System products on multiple computers using the same uninstallation options, record a response file during installation. You can then run a silent uninstallation from the command line, using the options that were saved in the response file.

To run a silent uninstallation:

1. Copy the response file that you created during installation to the machine on which you want to run the uninstallation. You can also copy the file to a network drive that is accessible from the machines on which you want to uninstall.

For information about recording a response file during installation, see "Performing Silent Installations" in the *Oracle Enterprise Performance Management System Installation and Configuration Guide*.

2. From the command line, enter a command:

For Windows:

```
uninstall.cmd -silent filename
```

For Linux:

```
uninstall.sh -silent filename
```

The uninstallation runs in the background.

## Uninstalling EPM System Clients

You can uninstall Oracle Enterprise Performance Management System clients using the `uninstall` option in the client installers.

To uninstall EPM System clients:

1. From the *client installer folder*, open the subfolder for the client installer and then double-click the client installer file name.
2. Proceed through the installation wizard, selecting **Remove**, and then click **Finish** when the uninstallation is complete.

### Note:

If you are uninstalling multiple clients that are installed on the same machine, or if a client is installed on the same machine as an EPM System server product, launch the uninstaller using the `DELETE_COMMON=false` command line parameter. See [Performing a Silent Client Uninstallation](#).

See "Installing EPM System Clients" in *Oracle Enterprise Performance Management System Installation and Configuration Guide* for details on client installers.

### Performing a Silent Client Uninstallation

You use the EPM System client installers with the command line parameter `/x` to uninstall EPM System clients.

To perform silent uninstallation of an EPM System client other than Oracle Essbase Client or Oracle Essbase Administration Services Console, use this command:

```
installer file name /x /s /v"/qn /l*v log file path and name"
```

For example, this command uninstalls Oracle Smart View for Office and creates the log `c:/temp/SilentInstall.log`:

```
SmartView.exe /x /s /v"/qn /l*v c:/temp/SilentInstall.log"
```

To perform a silent uninstallation of Essbase Client or Administration Services Console, use this command:

```
installer file name /x /s /v"/qn DELETE_COMMONS=value /l*v log file path and name"
```

where *value* is `true` or `false`.

Essbase Client and Administration Services Console share some common components. With the parameter `DELETE_COMMONS=true`, the uninstaller removes these common components. If multiple clients are installed on the same machine, or if the client is installed on the same machine as an EPM System server product, you must use `DELETE_COMMONS=false` if you want to delete only one of the clients.

## Removing Smart View Extensions

Oracle Smart View for Office supports provider extensions for the following Oracle Enterprise Performance Management System products:

- Oracle Hyperion Financial Reporting
- The Predictive Planning extension for Oracle Hyperion Planning
- The Planning Admin extension for Planning

For information about removing Smart View Extensions, see the *Oracle Smart View for Office User's Guide*.

If you are an administrator, see the *Oracle Smart View for Office User's Guide* for information about administering extensions.

# 8

## Performing Custom Configurations

This chapter describes additional custom configurations you can make to your Oracle Enterprise Performance Management System deployment.

### Optimizing Performance by Changing the Heap Size

Depending on your environment, you might need to change the heap size for your Java web application server. For example, if you see "OutOfMemory" errors in WebLogic, increase the heap size. If you need to reduce the memory requirement of the WebLogic Server, decrease the heap size.

By default, if you deploy Java web applications to a single managed server, EPM System Configurator sets the default heap size for the single managed server based on the machine's memory:

- 12 GB or more on machine, sets heap size at 8 GB
- 6 GB or more, up to but not including 12 GB, sets heap size at 4 GB
- Under 6 GB on a 32-bit machine, sets heap size at 750 MB
- Under 6 GB on a 64-bit machine, sets heap size at 1.536 MB

#### Changing the Heap Size

Use Windows Registry Editor to change the heap size of the Windows service. To change the heap size of a managed server on Windows:

1. On the machine hosting the product whose managed server you want to modify, open Windows Registry Editor: Select **Start** and then **Run**, enter `regedit`, and then click **OK**.
2. In Registry Editor, select **HKEY\_LOCAL\_MACHINE**, then **SOFTWARE**, then **Hyperion Solutions**, then ManagedServerName, and then WindowsServiceName\_InstanceName.

For example, if you deployed a single managed server, select **HKEY\_LOCAL\_MACHINE**, then **SOFTWARE**, then **Hyperion Solutions**, then **EPMServer0**, and then **HyS9EPMServer\_InstanceName**.

If you scaled out a single managed server, on the scaleout machine, select **HKEY\_LOCAL\_MACHINE**, then **SOFTWARE**, then **Hyperion Solutions**, then **EPMServer1**, and then **HyS9EPMServer\_InstanceName**.

For example, if you deployed Oracle Hyperion Planning, select **HKEY\_LOCAL\_MACHINE**, then **SOFTWARE**, then **Hyperion Solutions**, then **Planning0**, and then **HyS9Planning\_InstanceName**.

If you need a complete list of managed servers in your deployment, run a deployment report:

Navigate to `EPM_ORACLE_INSTANCE/bin` and execute the following command:

```
epmsys_registry report deployment
```



The report file (`deployment_report_YYYYMMDD_HHMMSS.html`) is stored in `EPM_ORACLE_INSTANCE/diagnostics/reports`.

3. Right-click `JVMOptionX` (where `X` is 1, 2, ...) whose value starts with `-Xmx`, and then select **Modify**.
4. In **Value data**, change the value to a value appropriate for your environment.

```
-XmxValuem
```

For example, to set the heap size to 8 GB, enter the following:

```
-Xmx8000m
```

5. Click **OK**.
6. Close Registry Editor.
7. Start Oracle Enterprise Performance Management System by selecting **Start**, then **All Programs**, then **Oracle EPM System**, then **Foundation Services**, and then **Start EPM System**.
8. Complete these steps for each managed server on each machine in the deployment.

For Linux machines or as an alternate method for Windows machine, change the heap size of a managed server in the product start script:

1. On the machine hosting the product whose managed server you want to modify, open the product's custom start script in a text editor:

```
EPM_ORACLE_INSTANCE/bin/deploymentScripts/  
setCustomParamsManagedServerName.bat|.sh
```

For example, to change the heap size for the Oracle Hyperion Foundation Services managed server, open `/bin/deploymentScripts/setCustomParamsFoundationServices.bat|.sh`.

2. Modify the entry that looks like this:

```
set USER_MEM_ARGS=-Xms128m -XX:PermSize=64m -XX:MaxPermSize=256m -  
Xmx512m
```

and edit the value for `-XmxValuem` to a value appropriate for your environment.

3. Save the file.
4. Rerun the script for the product after making changes.
5. Complete these steps for each managed server on each machine in the deployment.

### Validating the Heap Size

To validate that the heap size is set correctly:

1. Log in to the WebLogic Administration Console using WebLogic administrator credentials. (`http://WebLogic_Admin_Host:WebLogic_Admin_Port/console`, for example: `http://FNDHOST1:7001/console` (or select **Start**, then **All Programs**, then **Oracle WebLogic**, then **User Projects**, then **EPMSystem**, and then **Admin Server Console**).
2. In the Domain Structure, expand **Environment**, and then select **Servers**.
3. In **Summary of Servers**, select ManagedServerName.
4. Click the **Monitoring** tab, and then the **Performance** tab.
5. In **Java Virtual Machine Memory Utilization Statistics**, review the **Heap Size Max** setting.

## Customizing Essbase Configurations

This section describes additional configuration settings you might need for Oracle Essbase.

### Enabling Client Lookup by Cluster Name

Essbase clients can use a URL to connect to an Essbase cluster, in the form: `http(s)://host:port/essbase/agent?ClusterName=clusterName`. To simplify login, Essbase clients can use the cluster name directly instead of the URL.

### Designating a Specific Installation of JRE for use with Essbase

To designate a specific installation of JRE for use with Essbase, update the `JVMODULELOCATION` setting in `essbase.cfg`.

The `JVMODULELOCATION` setting in the `essbase.cfg` file (in `ARBORPATH/bin`) enables you to designate a specific installation of JRE for use with Essbase, and is required to enable Data Mining, Oracle Hyperion Shared Services, custom defined functions, triggers, and external authentication.

This setting is particularly useful if you have multiple versions of Java installed on the Essbase Server computer.

During Essbase Server configuration, the correct setting for `JVMODULELOCATION` is automatically added to `essbase.cfg`.

To change the `JVMODULELOCATION` parameters, you must specify the full path and file name of the Java Virtual Machine (JVM) library. The location and name of the library varies, depending on the operating system that you are using. EPM System Installer installs JRE in `1.8.0_181/jre`.

#### Note:

To run 64-bit Essbase on any 64-bit operating system requires a 64-bit JVM.

### Managing Memory with `JvmModuleLocation`

If you are not using Data Mining, Shared Services, custom defined functions, triggers, or external authentication, you can reduce the amount of memory used by editing `essbase.cfg` and setting `JvmModuleLocation` to null (empty).

If you are using these features, and need to reduce the amount of memory used, then you can reduce the JVM heap size by setting the following environment variables:

```
ESS_JVM_OPTION1=-Xmx16m
```

Because the default minimum and maximum for JVM heap size are different for different platforms and versions, set the correct value for your environment.

# 9

## Disaster Recovery

### Related Topics

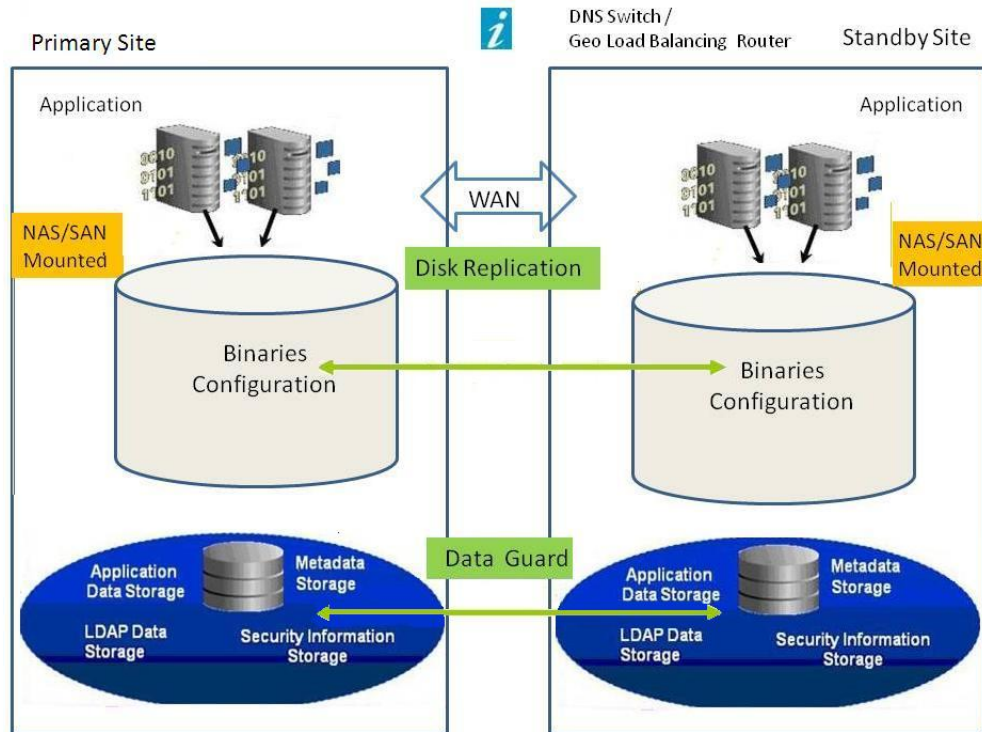
- [General Information About Disaster Recovery](#)
- [Disaster Recovery Architecture](#)
- [Disaster Recovery for EPM System Components](#)
- [Disaster Recovery Without File System and Database Replication](#)
- [Additional Information](#)

### General Information About Disaster Recovery

This chapter contains information that is specific to Oracle Enterprise Performance Management System Disaster Recovery configurations. The *Oracle Fusion Middleware Disaster Recovery Guide* ([http://download.oracle.com/docs/cd/E14571\\_01/doc.1111/e15250/toc.htm](http://download.oracle.com/docs/cd/E14571_01/doc.1111/e15250/toc.htm)) is the primary reference for design considerations, recommendations, setup procedures, troubleshooting steps, and other information that you need to deploy and manage the Oracle Fusion Middleware Disaster Recovery solution.

# Disaster Recovery Architecture

**Figure 9-1 EPM System Disaster Recovery Architecture**



**Note:**

Although the deployment shown in [Figure 1](#) uses symmetric topology, with the same number of servers at the production and standby sites, deployment using asymmetric topology (with fewer servers at the standby site than at the production site) is also possible. Deployment with asymmetric topology requires a server at the standby site for each logical server cluster at the production site.

Use of a shared or replicated disk requires a common share across machines; for example, the share can be under `/user_projects/data`.

## Disaster Recovery for EPM System Components

### Environment Configuration

Configuring a Disaster-Recovery environment requires these steps:

1. Install and configure Oracle Enterprise Performance Management System at the production site.

Runtime executables and data should be on a replicatable partition.

Distributed services must be clustered to form a logical service.

2. If the host names at the standby site differ from the host names at the production site, set up host name aliases at the standby site. See [Host Name Requirements](#).
3. When the EPM System configuration at the production site is complete, install and configure EPM System at the standby site.
4. If you are using Oracle Hyperion Financial Data Quality Management, Enterprise Edition, copy the following files from the primary environment to all the secondary nodes where EPM System web applications are configured:
  - `<DOMAIN_HOME>\config\fmwconfig\keystores.xml`
  - `<DOMAIN_HOME>\config\fmwconfig\cwallet.sso`
  - `<DOMAIN_HOME>\config\fmwconfig\bootstrap\cwallet.sso`
5. Set up database replication.

 **Note:**

You can use a backup and restoration procedure for replication.

6. Enable the standby site.
  - Disable mirroring between the production and standby sites.
  - Run the crash-recovery procedure for each application to recover Oracle Essbase. See Chapter 4, "Essbase Components," in the *Oracle Enterprise Performance Management System Backup and Recovery Guide*.
  - Start the services on the standby hosts.

### Host Name Requirements

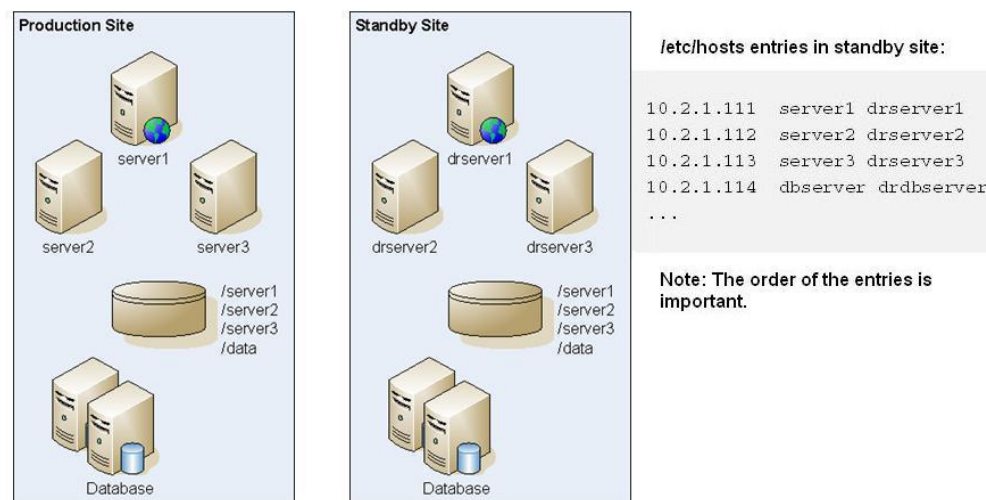
An EPM System Disaster Recovery deployment requires a means of resolving host references between the production and standby sites. Ensure that your configuration uses one of these options, listed in order of preference:

- Production and standby sites are on separate networks.

The fully qualified host names can be the same in both sites.
- Production and standby sites have different DNS that resolve the host names to the correct IP address in their network.

The standby site can have a standby DNS that is activated when a disaster occurs.
- Production host names are resolved to a local IP address at the standby site by means of an `/etc/hosts` file.

If the host names must differ between the production and standby sites and there is no separate DNS for the standby site, set up an alias for the production site servers in the standby site as shown below, so that the main server is the first entry in the alias.

**Figure 9-2 Host Name Alias Setup**

### Database Recommendations

Database recommendations for a Disaster Recovery environment:

- Use the database host name alias on the standby site.
- Use Oracle Data Guard configuration for data repositories.
- For planned configuration changes, force database synchronization with Oracle Data Guard.

## Disaster Recovery Without File System and Database Replication

You can set up Disaster Recovery using backup instead of file system and database replication. With replication, any changes made on the production site are also applied to the standby site. Backup is less costly than replication but enables you to recover only backed-up data. For example, if data was last backed up on Friday and the production site is damaged on the following Thursday, data changes that occurred between the two dates are lost. More-frequent backups enable you to recover more data.

The file system backup and the database backup must be synchronized. Backing up the file system and the database at approximately the same time, when there is relatively little activity, ensures that they are synchronized.

For Disaster Recovery without file systems and database replication, take one of these steps:

- Replicate the installation image to ensure that all patches applied to the production site after the initial setup are also applied to the standby site.
- Promptly manually apply all patches at the production site to the standby site.

## Additional Information

For more information about setting up a Disaster Recovery environment, see these documents:

- The *Oracle Fusion Middleware Disaster Recovery Guide* ([http://download.oracle.com/docs/cd/E14571\\_01/doc.1111/e15250/intro.htm#BABHCEJJ](http://download.oracle.com/docs/cd/E14571_01/doc.1111/e15250/intro.htm#BABHCEJJ))
- The Disaster Recovery guide for the RDBMS that you use