

Oracle® Solaris Cluster Data Service for Oracle Business Intelligence Enterprise Edition Guide

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Preface

Oracle Solaris Cluster Data Service for Oracle Business Intelligence Enterprise Edition Guide explains how to install and configure Oracle Solaris Cluster data services.

Note – This Oracle Solaris Cluster release supports systems that use the SPARC and x86 families of processor architectures: UltraSPARC, SPARC64, AMD64, and Intel 64. In this document, x86 refers to the larger family of 64-bit x86 compatible products. Information in this document pertains to all platforms unless otherwise specified.

This document is intended for system administrators with extensive knowledge of Oracle software and hardware. Do not use this document as a planning or presales guide. Before reading this document, you should have already determined your system requirements and purchased the appropriate equipment and software.

The instructions in this book assume knowledge of the Oracle Solaris Operating System and expertise with the volume-manager software that is used with Oracle Solaris Cluster software.

Using UNIX Commands

This document contains information about commands that are specific to installing and configuring Oracle Solaris Cluster data services. The document does *not* contain comprehensive information about basic UNIX commands and procedures, such as shutting down the system, booting the system, and configuring devices. Information about basic UNIX commands and procedures is available from the following sources:

- Online documentation for the Oracle Solaris Operating System
- Oracle Solaris Operating System man pages
- Other software documentation that you received with your system

Typographic Conventions

The following table describes the typographic conventions that are used in this book.

TABLE P-1 Typographic Conventions

| Typeface | Meaning | Example |
|------------------|---|---|
| AaBbCc123 | The names of commands, files, and directories, and onscreen computer output | Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> you have mail. |
| AaBbCc123 | What you type, contrasted with onscreen computer output | <code>machine_name%</code> su Password: |
| <i>aabbcc123</i> | Placeholder: replace with a real name or value | The command to remove a file is <i>rm filename</i> . |
| <i>AaBbCc123</i> | Book titles, new terms, and terms to be emphasized | Read Chapter 6 in the <i>User's Guide</i> . <i>A cache</i> is a copy that is stored locally. Do <i>not</i> save the file. Note: Some emphasized items appear bold online. |

Shell Prompts in Command Examples

The following table shows the default UNIX system prompt and superuser prompt for shells that are included in the Oracle Solaris OS. Note that the default system prompt that is displayed in command examples varies, depending on the Oracle Solaris release.

TABLE P-2 Shell Prompts

| Shell | Prompt |
|--|---------------|
| Bash shell, Korn shell, and Bourne shell | \$ |
| Bash shell, Korn shell, and Bourne shell for superuser | # |
| C shell | machine_name% |
| C shell for superuser | machine_name# |

Related Documentation

Information about related Oracle Solaris Cluster topics is available in the documentation that is listed in the following table. All Oracle Solaris Cluster documentation is available at <http://www.oracle.com/technetwork/indexes/documentation/index.html>.

| Topic | Documentation |
|--------------------------------|---|
| Data service administration | <i>Oracle Solaris Cluster Data Services Planning and Administration Guide</i> Individual data service guides |
| Concepts | <i>Oracle Solaris Cluster Concepts Guide</i> |
| Software installation | <i>Oracle Solaris Cluster Software Installation Guide</i> |
| System administration | <i>Oracle Solaris Cluster System Administration Guide</i> |
| Hardware administration | <i>Oracle Solaris Cluster 3.3 Hardware Administration Manual</i> Individual hardware administration guides |
| Data service development | <i>Oracle Solaris Cluster Data Services Developer's Guide</i> |
| Error messages | <i>Oracle Solaris Cluster Error Messages Guide</i> |
| Command and function reference | <i>Oracle Solaris Cluster Reference Manual</i> |

For a complete list of Oracle Solaris Cluster documentation, see the release notes for your release of Oracle Solaris Cluster at <http://www.oracle.com/technetwork/indexes/documentation/index.html>.

Related Third-Party Web Site References

Third-party URLs that are referenced in this document provide additional related information.

Note – Oracle is not responsible for the availability of third-party web sites mentioned in this document. Oracle does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Oracle will not be responsible or liable for any actual or alleged damage or loss caused or alleged to be caused by or in connection with use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

Documentation and Support

See the following web sites for additional resources:

- [Documentation \(http://www.oracle.com/technetwork/indexes/documentation/index.html\)](http://www.oracle.com/technetwork/indexes/documentation/index.html)
- [Support \(http://www.oracle.com/us/support/systems/index.html\)](http://www.oracle.com/us/support/systems/index.html)

Oracle Software Resources

[Oracle Technology Network \(http://www.oracle.com/technetwork/index.html\)](http://www.oracle.com/technetwork/index.html) offers a range of resources related to Oracle software:

- Discuss technical problems and solutions on the [Discussion Forums \(http://forums.oracle.com\)](http://forums.oracle.com).
- Get hands-on step-by-step tutorials with [Oracle By Example \(http://www.oracle.com/technetwork/tutorials/index.html\)](http://www.oracle.com/technetwork/tutorials/index.html).

Getting Help

If you have problems installing or using Oracle Solaris Cluster, contact your service provider and provide the following information:

- Your name and email address (if available)
- Your company name, address, and phone number
- The model number and serial number of your systems
- The release number of the Oracle Solaris Operating System (for example, Oracle Solaris 10)
- The release number of Oracle Solaris Cluster (for example, Oracle Solaris Cluster 3.3)

Use the following commands to gather information about each node on your system for your service provider.

| Command | Function |
|---|---|
| <code>prtconf -v</code> | Displays the size of the system memory and reports information about peripheral devices |
| <code>psrinfo -v</code> | Displays information about processors |
| <code>showrev -p</code> | Reports which patches are installed |
| <code>prtdiag -v</code> | Displays system diagnostic information |
| <code>/usr/cluster/bin/clnode show-rev</code> | Displays Oracle Solaris Cluster release and package version information |

Also have available the contents of the `/var/adm/messages` file.

Installing and Configuring HA for Oracle BI EE

This document explains how to install and configure HA for Oracle BI EE.

Note – This data service supports version 10.1.3.x of the Oracle Business Intelligence Enterprise Edition (Oracle BI EE) software running only on SPARC systems.

The instructions in this guide assume that you are using BEA WebLogic Server with Oracle BI EE. Other web servers are supported, but are not documented in this guide.

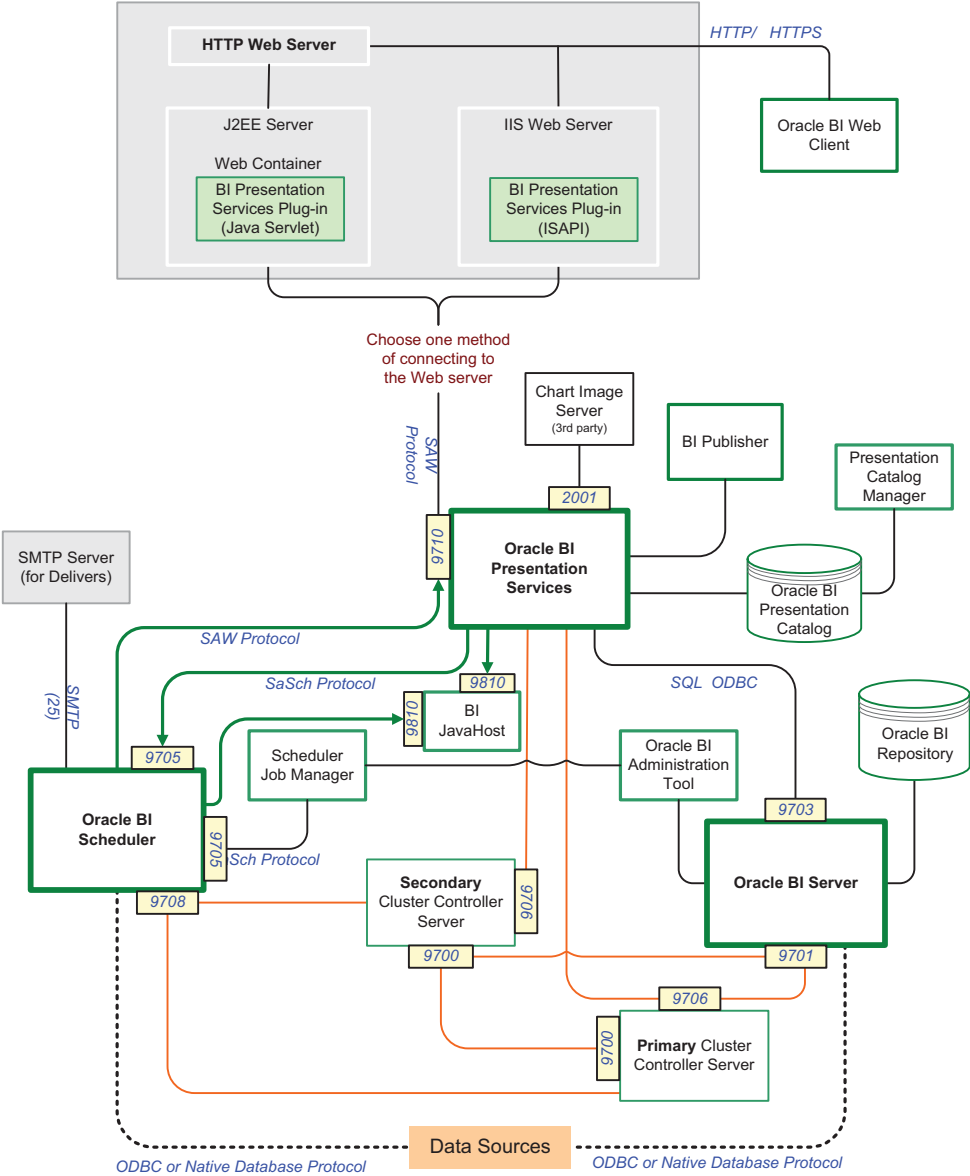
This chapter contains the following sections:

- “HA for Oracle BI EE Overview” on page 11
- “Overview of Installing and Configuring HA for Oracle BI EE” on page 14
- “Planning the HA for Oracle BI EE Installation and Configuration” on page 15
- “Installing and Configuring Oracle Business Intelligence Enterprise Edition” on page 16
- “Installing the HA for Oracle BI EE Packages” on page 18
- “Registering and Configuring HA for Oracle BI EE” on page 20
- “Verifying the HA for Oracle BI EE and Configuration” on page 35
- “Tuning the HA for Oracle BI EE Fault Monitors” on page 36
- “Debugging HA for Oracle BI EE” on page 37

HA for Oracle BI EE Overview

At a basic level, Oracle Business Intelligence Enterprise Edition is a multi-tier application that enables you to perform queries and reports against one or more data sources. [Figure 1–1](#) shows the relationships among the various components in the Oracle Business Intelligence Enterprise Edition stack.

FIGURE 1-1 Oracle Business Intelligence Enterprise Edition Components



The primary components of the Oracle Business Intelligence Enterprise Edition stack include the following:

- Oracle Business Intelligence (BI) Presentation Services Plug-in – An enterprise archive file (`analytics.ear`) or Web Archive file (`analytics.war`) plug-in loads into each configured J2EE web server container. The J2EE container can be any J2EE-compliant web container. However, the J2EE container is typically Oracle WebLogic Server or Oracle Containers for Java.
- Oracle BI Presentation Services – There can be multiple Presentation Service processes.
- Oracle BI Java Host – There can be multiple Java Host processes. The number of Java Host processes must be equal to the number of Presentation Services processes because they are started from a common script.
- Oracle BI Server – There are up to 16 BI servers, but only one is nominated as the master server. The list of potential hosts of the BI servers is static.
- Oracle BI Scheduler – There is one active primary scheduler and one passive secondary scheduler.
- Oracle BI Cluster Controller – There is one active primary cluster controller and one passive secondary cluster controller.
- One or more data sources.

In addition to these primary components, you can also configure a directory server to store user credentials to authenticate through the web browser sign-on process. For more information about the Oracle Business Intelligence Enterprise Edition components and how they communicate with each other, see [Oracle Business Intelligence Suite Enterprise Edition Documentation Library \(http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm\)](http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm).

For conceptual information about failover data services, multiple-master data services, and scalable data services, see *Oracle Solaris Cluster Concepts Guide*.

Clustering Capabilities of Oracle Business Intelligence Enterprise Edition

The Oracle Business Intelligence Enterprise Edition software offers its own clustering solution. User access is distributed through an external load-balancer (usually a hardware load-balancer), to the web service containers. Onward distribution of requests, made through the BI Presentation Service plug-in, are coordinated by the cluster controller.

The cluster controller has both a primary and secondary process. If the primary process fails, the secondary process takes over control of this distribution process. The cluster controller is aware of how many Business Intelligence (BI) servers are available and on which hosts. Similarly, if the active scheduler fails, the inactive (secondary) scheduler process can continue

to coordinate the scheduling of queued requests. In the event that the Oracle BI Server master fails, access to the shared repository is made read-only.

In a multi-master configuration, the HA for Oracle BI EE agents interoperate with the Oracle BI EE clustering components to provide greater functionality, such as start-up ordering, dependencies, and integration with disaster recovery. Because the Oracle BI EE clustering architecture allows Oracle BI EE instances to be run on different machines, you can use the Oracle Solaris Cluster multi-master configuration to achieve high availability and efficient load-balancing.

In a multi-master configuration, a resource group can be mastered on multiple nodes where the methods of the resources in the resource group are invoked by the Resource Group Manager on all the nodes where the resource group is mastered. The resource group is typically mastered on more than one node. The nodes on which the resource group can be brought online can be specified while creating the resource group. The `Maximum primaries` and `Desired primaries` properties of the resource group are used to specify the number of primaries and desired primaries on which the resource group should be brought online.

Note – Although BI servers can be started and stopped dynamically as part of a multi-master BI server resource group, the number and location of these BI servers is determined by the `SERVERS` variable in the `NQClusterConfig.INI` file. The cluster controller only expects the servers listed in this variable to come online, thus the configuration is dynamic within the confines of the servers specified.

Overview of Installing and Configuring HA for Oracle BI EE

The following list summarizes the tasks for installing and configuring HA for Oracle BI EE and provides cross-references to detailed instructions for performing these tasks. Perform the tasks in the order that they are shown.

- [“Planning the HA for Oracle BI EE Installation and Configuration” on page 15](#)
- [“Installing and Configuring Oracle Business Intelligence Enterprise Edition” on page 16](#)
- [“Installing the HA for Oracle BI EE Packages” on page 18](#)
- [“Registering and Configuring HA for Oracle BI EE” on page 20](#)
- [“Verifying the HA for Oracle BI EE and Configuration” on page 35](#)
- [“Tuning the HA for Oracle BI EE Fault Monitors” on page 36](#)
- [“Debugging HA for Oracle BI EE” on page 37](#)

Planning the HA for Oracle BI EE Installation and Configuration

This section contains the information you need to plan your HA for Oracle BI EE installation and configuration.

Configuration Requirements

The configuration requirements in this section apply only to HA for Oracle BI EE.



Caution – If your data service configuration does not conform to these requirements, the data service configuration might not be supported.

- Because Oracle Business Intelligence Enterprise Edition software supports a wide range of locales, including the default of en-US . UTF - 8, Solaris must be installed with the appropriate 8-bit locales.
- For a multi-master configuration, the following key configuration files must be kept consistent between the cluster nodes:
 - *Oracle-BI-Home/OracleBI/server/Config/NQSCConfig.INI*
 - *Oracle-BI-Home/OracleBI/server/Config/NQClusterConfig.INI*
 - *Oracle-BI-Home/OracleBIData/scheduler/config/instanceconfig.xml* (for the Scheduler)
 - *Oracle-BI-Home/OracleBIData/web/config/instanceconfig.xml* (for the BI Presentation Services)
- For a multi-master configuration, the Oracle Business Intelligence Enterprise Edition software must be installed following the identical directory structure on each participating cluster node.
- For a multi-master configuration, the following sets of files must be shared among the participating cluster nodes:
 - Presentation catalog: *Oracle-BI-Home/OracleBIData/web/catalog/catalog_name*
 - Repository publishing directory:
Oracle-BI-Home/OracleBIData/cluster_rep_pub_dir
 - Cluster-aware global cache: *Oracle-BI-Home/OracleBIData/cluster_cache_dir*
 - Scheduler scripts directory: *Oracle-BI-Home/OracleBI/server/Scripts/Common*

Installing and Configuring Oracle Business Intelligence Enterprise Edition

Installing and configuring Oracle Business Intelligence Enterprise Edition involves the following steps. For detailed instructions on installing Oracle BI EE, see [Oracle Business Intelligence Infrastructure Installation and Configuration Guide](#). For additional information about configuring clustering, see [Oracle BI EE Deployment Guide](#).

▼ How to Install and Configure Oracle BI EE

- 1 **Create a Solaris user to own the software installation, for example, user obiee, group obiee.**

- 2 **Set the maximum number of files that a process can open to 10,240.**

Use the `projmod` command to alter the setting for the default project, for example. If the resource group or resource is bound to a different project, then that project definition also requires updating.

```
$ cat /etc/project
system:0:::
user.root:1:::
nopproject:2:::
default:3:::process.max-file-descriptor=(priv,10240,deny)
group.staff:10:::
```

- 3 **Download the Oracle Business Intelligence Enterprise Edition and WebLogic software bundles from the Oracle download site.**

Note – This data service supports version 10.1.3.x of the Oracle Business Intelligence Enterprise Edition (Oracle BI EE) software running only on SPARC systems.

The instructions in this section assume that you are using BEA WebLogic Server with Oracle BI EE. Other web servers are supported, but are not documented in this guide.

- 4 **(Optional) Install the WebLogic Server software.**

For more information, see [Oracle WebLogic Server 10.3 Installation Guide](#).

- 5 **Verify that a Java 1.5.0 JDK is installed and that the JDK files and directories are writable.**

```
$ chmod -R a+rx /usr/j2sdk1.5.0_04
```

For more information, see [Oracle Business Intelligence Infrastructure Installation and Configuration Guide](#).

- 6 **Extract (unzip) the Oracle BI EE software into a temporary location (for example, /download).**

- 7 Go to the `Solaris/Server/Oracle_Business_Intelligence` subdirectory of the location into which the Oracle BI EE software was extracted.
- 8 (Optional) If you plan to run a failover configuration, configure Oracle Solaris Cluster for the failover component:
 - a. Create a resource group for the failover component.
 - b. Create a LogicalHostName resource for the failover component.
 - c. Create the highly available local file system.
 - d. Create an HAStoragePlus resource for the highly available local file system.
 - e. Bring the resource group online.

For detailed information about these steps, see the appropriate failover configuration section.

- 9 Run the `UnixChk.sh` shell script and specify the intended installation directory for the Oracle BI EE software.
 - For a failover configuration, use a command similar to the following example:


```
$ ./UnixChk.sh /failover/obiee
SUCCESS!! - This machine is configured for Oracle BI EE 10.1.3.4
```
 - For a multi-master configuration, use a command similar to the following example where the path points to a local disk:


```
$ ./UnixChk.sh /export/home/obiee
SUCCESS!! - This machine is configured for Oracle BI EE 10.1.3.4
```
- 10 Set the `DISPLAY` environment variable if required, then run the `setup.sh` script.
- 11 Specify the installation and data directory names.
 - For a failover configuration, the directories should both be on a highly available local file system.
 - For a multi-master configuration, the directories should be on a local file system.
- 12 Select the Oracle BI EE Presentation Services or BI Server installation option depending on which tier is being installed.
- 13 Type the path to the JDK directory and provide a password for `oc4jadmin`.

Note – This information is important only if you are using Oracle Containers for Java. If you are using BEA WebLogic Server, it does not matter what you enter in this step and you should stop the oc4j process after installation finishes.

- 14 If you are using Oracle WebLogic Server, when the installation completes, go to the setup directory and shut down oc4j.**

Note – The port number might vary from what is shown in the following example.

```
$ cd /failover/obiee/OracleBI/setup
$ ./oc4j -shutdown -port 23791 -password password-supplied
```

- 15 Install the ORCLscobiee package.**

For more information, see [“Installing the HA for Oracle BI EE Packages”](#) on page 18.

Installing the HA for Oracle BI EE Packages

If you did not install the HA for Oracle BI EE packages during your initial Oracle Solaris Cluster installation, perform this procedure to install the packages.

▼ How to Install the HA for Oracle BI EE Packages

Perform this procedure on each cluster node where you are installing the HA for Oracle BI EE packages.

You can run the `installer` program with a command-line interface (CLI) or with a graphical user interface (GUI). The content and sequence of instructions in the CLI and the GUI are similar.

Note – Even if you plan to configure this data service to run in non-global zones, install the packages for this data service in the global zone. The packages are propagated to any existing non-global zones and to any non-global zones that are created after you install the packages.

Before You Begin Ensure that you have the Oracle Solaris Cluster installation media.

If you intend to run the `installer` program with a GUI, ensure that your `DISPLAY` environment variable is set.

- 1 On the cluster node where you are installing the data service packages, become superuser.**

2 Load the Oracle Solaris Cluster installation media into the DVD-ROM drive.

If the Volume Management daemon `vold(1M)` is running and configured to manage DVD-ROM devices, the daemon automatically mounts the DVD-ROM on the `/cdrom` directory.

3 Change to the installation wizard directory of the DVD-ROM.

If you are installing the data service packages on the SPARC platform, type the following command:

```
# cd /cdrom/cdrom0/Solaris_sparc
```

4 Start the installation wizard.

```
# ./installer
```

5 When you are prompted, accept the license agreement.**6 From the list of Oracle Solaris Cluster agents under Availability Services, select the data service for Oracle Business Intelligence Enterprise Edition.****7 If you require support for languages other than English, select the option to install multilingual packages.**

English language support is always installed.

8 When prompted whether to configure the data service now or later, choose Configure Later.

Choose Configure Later to perform the configuration after the installation.

9 Follow the instructions on the screen to install the data service packages on the node.

The installation wizard displays the status of the installation. When the installation is complete, the wizard displays an installation summary and the installation logs.

10 (GUI only) If you do not want to register the product and receive product updates, deselect the Product Registration option.

The Product Registration option is not available with the CLI. If you are running the installation wizard with the CLI, omit this step.

11 Exit the installation wizard.**12 Unload the installation media from the DVD-ROM drive.**

a. To ensure that the DVD-ROM is not being used, change to a directory that does *not* reside on the DVD-ROM.

b. Eject the DVD-ROM.

```
# eject cdrom
```

Next Steps See [“Registering and Configuring HA for Oracle BI EE” on page 20](#) to register HA for Oracle BI EE and to configure the cluster for the data service.

Registering and Configuring HA for Oracle BI EE

Before you perform the tasks in this section:

- Ensure that the HA for Oracle BI EE data service packages are installed.
- Decide which services you need to register and configure. For guidance, see [“Determining Which Services You Need” on page 20](#).

Registering and configuring HA for Oracle BI EE involves the tasks that are explained in the following sections.

Determining Which Services You Need

[Figure 1–2](#) helps you to decide which services you need for a failover configuration. [Figure 1–3](#) helps you to decide which services you need for a multi-master configuration.

FIGURE 1-2 Oracle BI EE Resources in a Failover Configuration

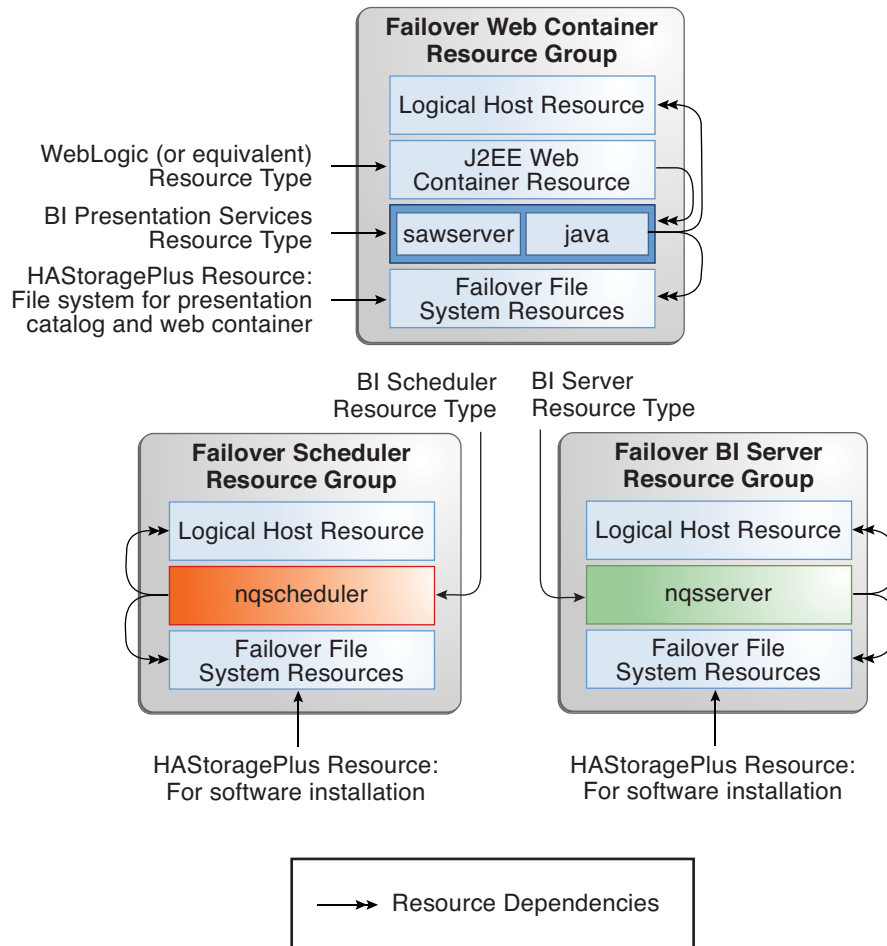
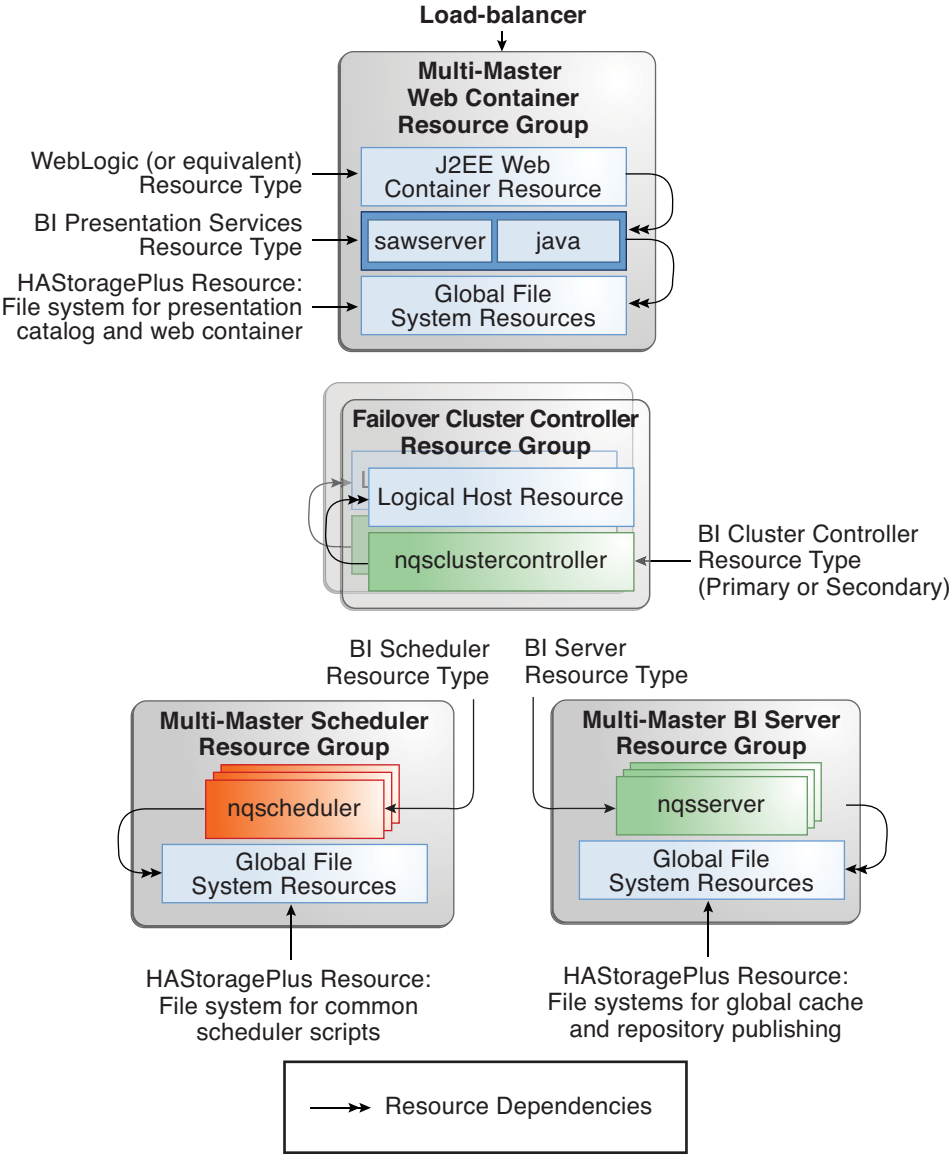


FIGURE 1-3 Oracle BI EE Resources in a Multi-Master Configuration



Presentation Services Configuration

This section describes how to configure the Presentation Services and create the appropriate Oracle Solaris Cluster resource groups and resources for both a failover and a multi-master case.

Once the Oracle BI EE Presentation Services software has been installed, you must configure the WebLogic Server to load the `analytics.ear` (Enterprise Archive) file as described in the BEA WebLogic Server documentation. Ensure that the plug-in is marked as active, otherwise attempts to connect to the service will result in HTTP 503 errors. The plug-in cannot be tested until the entire stack, Presentation Services, BI Server and Cluster Controller, where appropriate, are set up.

▼ How to Define a Failover Configuration for Presentation Services

Before You Begin Before you create the BI Presentation Service resource for a failover configuration, you might need to edit the following files:

- `BI_DATA_DIRECTORY/web/config/instanceconfig.xml` – Check the setting for the `<DSN>` tag. This field references a `[tag_name]` section in the `odbc.ini` file.
- `BI_INSTALL_DIRECTORY/setup/odbc.ini` – Set the `ServerMachine` and `Port` entries that will be used by the BI server. For a failover configuration, the `ServerMachine` corresponds to the host name plumbed by the `SUNW.LogicalHostname` resource in the BI Server resource group.

1 Create a resource group for the WebLogic Server (or OC4J) instance.

```
# clresourcegroup create -n phys-green1:green-zone1,phys-green2:green-zone2 \
wls-svr-rg
```

2 Create the logical hostname resource for WebLogic Server.

```
# clreslogicalhostname create -g wls-svr-rg -h green-lh2 wls-svr-lh-rs
```

3 Create an HASStoragePlus resource for WebLogic Server.

```
# clresource create -t SUNW.HASStoragePlus -g wls-svr-rg \
-p FileSystemMountPoints=/failover/wls:/failover/wls \
wls-svr-hasp-rs
```

For more information about creating a failover configuration for WebLogic Server, see [Oracle Solaris Cluster Data Service for WebLogic Server Guide](#).

4 Bring the WebLogic Server resource group online.

```
# clresourcegroup online -eM wls-svr-rg
```

5 Create the WebLogic Server resource.

This resource must reside in the same resource group as the Presentation Service resource.

```
# clresource create -t SUNW.wls -g wls-svr-rg \
-p resource_dependencies=wls-svr-hasp-rs \
-p Confdir_list=/failover/wls/Oracle/Middleware/wlserver_10.3 \
-p Server_url=http://green-lh2.example.com:7003 \
-p Start_script=/failover/wls/Oracle/Middleware/user_projects/domains/obiee/bin/
startManagedWebLogic.sh \
-p Server_name=ms1 wls-svr-rs
```

6 Install the Oracle BI EE software.

For more information, see “[Installing and Configuring Oracle Business Intelligence Enterprise Edition](#)” on page 16.

7 Register the BI Presentation Services resource type.

```
# clresourcetype register ORCL.obiee_presentation_service
```

8 Create the BI Presentation Services resource group.

```
# clresource create -g wls-svr-rg \
-t ORCL.obiee_presentation_service \
-p Run_64_bit=True \
-p resource_dependencies=wls-svr-hasp-rs,wls-svr-lh-rs \
-p BI_INSTALL_DIRECTORY=/failover/wls/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/failover/wls/obiee/OracleBIData \
bi-pres-svc-rs
```

9 Verify that the BI presentation services resource group is online.

```
# clresource status bi-pres-svc-rs
=== Cluster Resources ===
Resource Name      Node Name              State      Status      Message
-----
bi-pres-svc-rs    phys-green1:green-zone1 Online      Online - Service is online.
                  phys-green2:green-zone2 Offline      Offline
```

10 Set an offline_restart dependency between the WebLogic Server resource and the BI Presentation Services resource.

Because the WebLogic Server Presentation Service plug-in sends requests to the local BI Presentation Service server process, the WebLogic Server resource must set an `offline_restart` dependency on the BI Presentation Service resource. This setting ensures that if a BI Presentation Service server is unavailable, the load-balancer stops sending requests to the WebLogic Server.

```
# clresource set \
-p resource_dependencies_offline_restart=bi-pres-svc-rs \
wls-svr-rs
```

11 Verify that the configuration is valid.

```
# ps -ef | grep sawserver
# /usr/java/bin/jps -v | grep javahost
```

The Presentation Services tier results in two processes being started: `sawserver` and a Java process. The name of the `sawserver` process depends on whether the 64-bit option is chosen.

If the BI server has been configured, you can log in from a web browser using one of the accounts that you have configured. For example, if the WebLogic Server is running on logical host `green-lh1` on port 7003, the URL would be `http://green-lh1:7003/analytics/saw.dll?Dashboard`.

▼ How to Define a Multi-Master Configuration for Presentation Services

A multi-master Presentation Services configuration requires a multi-master WebLogic Server configuration and a mechanism to load-balance incoming web connections. A failover Sun Java Web Server with a load-balancing plug-in can be configured to perform this task. For more information about creating a multi-master configuration for WebLogic Server, see [Oracle Solaris Cluster Data Service for WebLogic Server Guide](#).

Before You Begin Before you create the multi-master configuration for BI Presentation Services, you need to edit the following configuration file:

- *BI_INSTALL_DIRECTORY/setup/odbc.ini* – A multi-master Presentation Services configuration requires primary and secondary cluster controllers to be defined in the *odbc.ini* file. Therefore, ensure that the PrimaryCCS and SecondaryCCS entries are present in the file. The host names used must be capable of being resolved.

Note – When using a multi-master BI Presentation Services configuration, the *instanceconfig.xml* and *odbc.ini* files must remain synchronized. You can manually copy the changes between machines, or you can link the files to centrally held copies on a global file system. However, if you link these two files, the remainder of the Oracle BI EE software must be installed on local file systems.

1 Create a resource group for the multi-master WebLogic Server configuration.

```
# clresourcegroup create -n phys-green1:green-zone1,phys-green2:green-zone2 \
-p RG_mode=Scalable \
-p Maximum_primaries=2 \
-p Desired_primaries=2 \
mm-wls-svr-rg
```

2 Create an HAStoragePlus resource for WebLogic Server.

```
# clresource create -t SUNW.HAStoragePlus -g mm-wls-svr-rg \
-p FileSystemMountPoints=/global/wls:/global/wls \
mm-wls-svr-haspr-s
```

3 Bring the WebLogic Server resource group online.

```
# clresourcegroup online -eM mm-wls-svr-rg
```

4 Create the WebLogic Server resource.

```
# clresource create -t SUNW.wls -g mm-wls-svr-rg \
-p Confdir_list=/export/home/beam/Oracle/Middleware/wlserver_10.3 \
-p Server_url=http://localhost:7003 \
-p Start_script=/export/home/beam/Oracle/Middleware/user_projects/domains/obiee/bin/
startManagedWebLogic.sh \
-p "Server_name{phys-green1:green-zone1}"=ms1 \
-p "Server_name{phys-green2:green-zone2}"=ms2 \
-p smooth_shutdown=true \
-p resource_dependencies=mm-wls-svr-haspr-s \
mm-wls-svr-rs
```

5 Verify that the WebLogic Server resource group is online.

```
# clresource status -g mm-wls-svr-rg
```

```
=== Cluster Resources ===
```

| Resource Name | Node Name | State | Status Message |
|---------------------------|--------------------------------|--------|-----------------------------|
| <i>mm-wls-svr-hasp-rs</i> | <i>phys-green1:green-zone1</i> | Online | Online |
| | <i>phys-green2:green-zone2</i> | Online | Online |
| <i>mm-wls-svr-rs</i> | <i>phys-green1:green-zone1</i> | Online | Online - Service is online. |
| | <i>phys-green2:green-zone2</i> | Online | Online - Service is online. |

6 Register the BI Presentation Services resource type.

```
# clresourcetype register ORCL.obiee_presentation_service
```

7 Create the BI Presentation Services resource group.

```
# clresource create -t ORCL.obiee_presentation_service \
-g mm-wls-svr-rg -p BI_INSTALL_DIRECTORY=/export/home/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/export/home/obiee/OracleBIData \
-p resource_dependencies=mm-wls-svr-hasp-rs \
mm-pres-svc-rs
```

8 Verify that the BI Presentation Services resource is online.

```
# clresource status -g mm-wls-svr-rg
```

```
=== Cluster Resources ===
```

| Resource Name | Node Name | State | Status Message |
|---------------------------|--------------------------------|--------|-----------------------------|
| <i>mm-wls-svr-hasp-rs</i> | <i>phys-green1:green-zone1</i> | Online | Online |
| | <i>phys-green2:green-zone2</i> | Online | Online |
| <i>mm-wls-svr-rs</i> | <i>phys-green1:green-zone1</i> | Online | Online - Service is online. |
| | <i>phys-green2:green-zone2</i> | Online | Online - Service is online. |
| <i>mm-pres-svc-rs</i> | <i>phys-green1:green-zone1</i> | Online | Online - Service is online. |
| | <i>phys-green2:green-zone2</i> | Online | Online - Service is online. |

9 Set an offline_restart dependency between the WebLogic Server resource and the BI Presentation Services resource.

Because the WebLogic Server Presentation Service plug-in sends requests to the local BI Presentation Service server process, the WebLogic Server resource must set an offline_restart dependency on the BI Presentation Service resource. This ensures that if a BI Presentation Service server is unavailable, the load-balancer stops sending requests to the WebLogic Server.

```
# clresource set \
-p resource_dependencies_offline_restart=mm-pres-svc-rs \
mm-wls-svr-rs
```

10 Verify that the configuration is valid.

When a multi-master configuration is used, connection is made through the logical hostname of the load-balancer resource. For example, if the Sun Java System Web Server is running on logical host web-svr-lh, the URL is `http://wls-svr-lh/analytics/saw.dll?Dashboard`. The requests are then load-balanced to the underlying managed WebLogic Servers that listen on port 7003.

BI Server Configuration

This section describes how to configure the BI server and create the appropriate Oracle Solaris Cluster resource groups and resources for both a failover and a multi-master case.

▼ How to Define a Failover Configuration for BI Server

The failover BI server configuration does not require a cluster controller because there is only one active BI server process. Therefore, configuration of a failover BI server is similar to configuration on a single server with the exception that the software is installed directly on a highly available local file system managed by Oracle Solaris Cluster.

Before You Begin Before you create the BI Server resource for a failover configuration, you might need to edit the following files:

- *BI_INSTALL_DIRECTORY*/server/Config/NQConfig.INI – Verify the following settings:
 - All the file paths should be part of the highly available local file system.
 - *SERVER_HOSTNAME_OR_IP_ADDRESSES* should be set to the logical hostname or ALLNICS.
 - *CLUSTER_PARTICIPANT* must be set to NO.
- *BI_INSTALL_DIRECTORY*/server/Config/NQClusterConfig.INI – Set *ENABLE_CONTROLLER* to NO. Although not strictly required by Oracle BI EE, this setting ensures that there is no confusion as to the configuration being implemented.

1 Create a resource group for the BI Server.

```
# clresourcegroup create -n phys-red1:red-zone1,phys-red2:red-zone2 bi-svr-rg
```

2 Create the logical hostname resource for BI Server.

```
# clreslogicalhostname create -g bi-svr-rg -h red-lh1 bi-svr-lh-rs
```

3 Create an HAStoragePlus resource for BI Server.

```
# clresource create -t SUNW.HAStoragePlus -g bi-svr-rg \
-p FileSystemMountPoints=/failover/obiee:/failover/obiee \
bi-svr-hasp-rs
```

4 Bring online the BI Server resource group.

```
# clresourcegroup online -eM bi-svr-rg
```

5 Install the Oracle BI EE software.

For more information, see [“Installing and Configuring Oracle Business Intelligence Enterprise Edition” on page 16](#).

6 Register the BI Server resource type.

```
# clresourcetype register ORCL.obiee_server
```

7 Create the BI Server resource.

```
# clresource create -g bi-svr-rg \  
-t ORCL.obiee_server \  
-p Run_64_bit=True \  
-p resource_dependencies=bi-svr-hasp-rs,bi-svr-lh-rs \  
-p BI_INSTALL_DIRECTORY=/failover/obiee/OracleBI \  
-p BI_DATA_DIRECTORY=/failover/obiee/OracleBIData \  
-p BI_PROBE_USER=demo \  
-p BI_PROBE_PASSWORD=demo \  
bi-svc-rs
```

8 Verify the status of the BI Server resource.

```
# clresource status bi-svr-rs  
=== Cluster Resources ===  
Resource Name      Node Name          State      Status Message  
-----  
bi-svr-rs          phys-red1:red-zone1 Online      Online - Service is online.  
                   phys-red2:red-zone2 Offline      Offline
```

Because the BI Server does not have any hard dependencies on other services, it does not require any resource dependencies to be set. Once the BI server is running, connection can be made through the Web interface.

▼ How to Define a Multi-Master Configuration for BI Server

A multi-master BI Server configuration requires primary and secondary BI Cluster Controller to be configured, although strictly speaking, the secondary BI controller is optional when creating a Oracle Solaris Cluster configuration. The BI Cluster Controller is responsible for load-balancing the requests coming in from the Presentation Services clients to the available BI servers.

Before You Begin Before you create the BI Server resource for a multi-master configuration, you might need to edit the following files:

- *BI_INSTALL_DIRECTORY*/server/Config/NQConfig.INI – Verify the following settings:
 - *SERVER_HOSTNAME_OR_IP_ADDRESSES* should be commented out.
 - *CLUSTER_PARTICIPANT* must be set to YES .
- *BI_INSTALL_DIRECTORY*/server/Config/NQClusterConfig.INI – Verify the following settings:

Note – Although not strictly required by Oracle BI EE, these settings are used to verify the resource group settings for the cluster controller configuration.

- *ENABLE_CONTROLLER* must be set to YES .
- Primary and secondary controllers are defined to listen on logical hosts, for example:

```
PRIMARY_CONTROLLER = "red-lh2";
SECONDARY_CONTROLLER = "red-lh3";
```

- Servers are set to a list of the nodes that are defined in the multi-master resource group, for example:

```
SERVERS = "red-zone1","red-zone2";
```

- One of the nodes in the multi-master resource group is set to be the master server, for example:

```
MASTER_SERVER = "red-zone1";
```

- The BI Server global cache directory and the repository publishing directory must be on a cluster file system and be configured under a SUNW.HAStoragePlus resource.

1 Create a resource group for the BI Server.

```
# clresourcegroup create -n phys-red1:red-zone1,phys-red2:red-zone2 \
-p maximum_primaries=2 \
-p desired_primaries=2 \
mm-bi-svr-rg
```

2 Create an HAStoragePlus resource for BI Server.

```
# clresource create -t SUNW.HAStoragePlus -g bi-svr-rg \
-p FileSystemMountPoints=/global/obiee:/global/obiee \
mm-bi-svr-hasp-rs
```

3 Bring online the BI Server resource group.

```
# clresourcegroup online -eM mm-bi-svr-rg
```

4 Register the BI Server resource type.

```
# clresourcetype register ORCL.obiee_server
```

5 Create the BI Server resource.

In the example below, the PROBE user and password are optional. The password is not protected, therefore, the user account must have no privileges to query anything other than the list of catalogs from the BI servers. This approach enables the probe to connect to the BI server and get a response back to the list catalogs query which helps to demonstrate the responsiveness of the BI server.

```
# clresource create -g mm-bi-svr-rg \
-t ORCL.obiee_server \
-p Run_64_bit=True \
-p resource_dependencies=mm-bi-svr-hasp-rs \
-p BI_INSTALL_DIRECTORY=/export/home/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/export/home/obiee/OracleBIData \
-p BI_PROBE_USER=demo \
-p BI_PROBE_PASSWORD=demo \
mm-bi-svc-rs
```

6 Verify the status of the BI Server resource.

```
# clresource status -g mm-bi-svr-rg
=== Cluster Resources ===
```

| Resource Name | Node Name | State | Status | Message |
|--------------------------|----------------------------|--------|--------|---------|
| <hr/> | | | | |
| <i>mm-bi-svr-hasp-rs</i> | <i>phys-red1:red-zone1</i> | Online | Online | |
| | <i>phys-red2:red-zone2</i> | Online | Online | Online |
| | <i>phys-red1:red-zone1</i> | Online | Online | |
| | <i>phys-red2:red-zone2</i> | Online | Online | Online |

BI Cluster Controller Configuration

This section describes how to configure the BI Cluster Controller and create the appropriate Oracle Solaris Cluster resource groups and resources to support highly available solutions.

▼ How to Define a Highly Available BI Cluster Controller Configuration

Note – The failover BI Cluster Controller resource groups provide the “glue” between the multi-master BI Presentation Services and the multi-master BI Servers and multi-master Schedulers.

Before You Begin

Before you create the BI Cluster Controller resource for a failover configuration, you might need to edit the following file:

- *BI_INSTALL_DIRECTORY*/server/Config/NQClusterConfig.INI – Verify the following settings:
 - `ENABLE_CONTROLLER` must be set to `YES`.
 - Primary and secondary cluster controllers are defined to listen on logical hosts, for example:

```
PRIMARY_CONTROLLER = "red-lh2";
SECONDARY_CONTROLLER = "red-lh3";
```
 - Servers are set to a list of the nodes that are defined in the multi-master resource group, for example:

```
SERVERS = "red-zone1", "red-zone2";
```
 - One of the nodes in the multi-master resource group is set to be the master server, for example:

```
MASTER_SERVER = "red-zone1";
```

1 Create a resource group for the primary BI Cluster Controller.

```
# clresourcegroup create -n phys-red1:red-zone1 fo-bi-pcc-rg
```

Note – Although the failover resource group can contain more than one node, the list of nodes for the primary BI Cluster Controller resource group and the list of nodes for the secondary BI Cluster Controller resource group cannot intersect.

2 Create the logical hostname resource for the primary BI Cluster Controller.

```
# clreslogicalhostname create -h red-lh2 -g fo-bi-pcc-rg fo-bi-pcc-lh-rs
```

3 Create the resource for the primary BI Cluster Controller.

```
# clresource create -t ORCL.obiee_cluster_controller \
-g fo-bi-pcc-rg \
-p BI_INSTALL_DIRECTORY=/export/home/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/export/home/obiee/OracleBIData \
-p Run_64_bit=TRUE \
-p CLUSTER_CONTROLLER_ROLE=PRIMARY \
-p Resource_dependencies=fo-bi-pcc-lh-rs \
fo-bi-pcc-rs
```

4 Create a resource group for the secondary BI Cluster Controller.

```
# clresourcegroup create -n phys-red2:red-zone2 fo-bi-scc-rg
```

Note – Although the failover resource group can contain more than one node, the list of nodes for the primary BI Cluster Controller resource group and the list of nodes for the secondary BI Cluster Controller resource group cannot intersect.

5 Create the logical hostname resource for the secondary BI Cluster Controller.

```
# clreslogicalhostname create -h red-lh3 -g fo-bi-scc-rg fo-bi-scc-lh-rs
```

6 Create the resource for the secondary BI Cluster Controller.

```
# clresource create -t ORCL.obiee_cluster_controller \
-g fo-bi-scc-rg \
-p BI_INSTALL_DIRECTORY=/export/home/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/export/home/obiee/OracleBIData \
-p Run_64_bit=TRUE \
-p CLUSTER_CONTROLLER_ROLE=SECONDARY \
-p Resource_dependencies=fo-bi-scc-lh-rs \
fo-bi-scc-rs
```

7 Bring the BI Cluster Controller resource groups online.

```
# clresourcegroup online -eM fo-bi-pcc-rg fo-bi-scc-rg
```

8 Verify the resource status.

```
# clresource status -g fo-bi-pcc-rg,fo-bi-scc-rg
=== Cluster Resources ===
```

| Resource Name | Node Name | State | Status Message |
|-----------------|---------------------|--------|----------------------------------|
| fo-bi-pcc-lh-rs | phys-red1:red-zone1 | Online | Online - LogicalHostname online. |
| fo-bi-pcc-rs | phys-red1:red-zone1 | Online | Online - Service is online. |

| | | | |
|------------------------|----------------------------|--------|----------------------------------|
| <i>fo-bi-scc-lh-rs</i> | <i>phys-red2:red-zone2</i> | Online | Online - LogicalHostname online. |
| <i>fo-bi-scc-rs</i> | <i>phys-red2:red-zone2</i> | Online | Online - Service is online. |

BI Scheduler Configuration

This section describes how to configure the BI scheduler and create the appropriate Oracle Solaris Cluster resource groups and resources for both a failover and a multi-master case.

▼ How to Define a Failover Configuration for BI Scheduler

The failover BI scheduler configuration does not require a cluster controller because there is only one active BI scheduler process.

1 As user `oracle` (or any non-root user), install the Oracle Database client software on the servers that will host the scheduler.

The schedulers need access to the Oracle Database client libraries and `tnsnames.ora` file to be able to connect to the scheduler database.

2 Create and configure a database to hold the scheduler job information.

For more information, see the section “Creating Oracle BI Scheduler Database and Tables for Specific Databases” in the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* available from http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm.

Note – If the schedule database is an Oracle database on an Oracle Solaris Cluster configuration, make the schedule highly available by using the Oracle Solaris Cluster HA for Oracle agent or by using an Oracle RAC database with Oracle Solaris Cluster.

3 Configure the scheduler.

For more information, see the section “Configuring Oracle BI Scheduler Under UNIX” in the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* available from http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm.

4 Edit the scheduler user parameters file to provide appropriate Solaris information.

To access the Oracle client libraries, the scheduler uses parameters set in the `BI_INSTALL_DIRECTORY/setup/user.sh` file. Uncomment and provide appropriate values for the Solaris entries:

```
$ cat ~/OracleBI/setup/user.sh
.
.
.
ORACLE_HOME=/export/home/oracle/app/oracle/product/11.1.0/client_1
export ORACLE_HOME
```



```

TNS_ADMIN=$ORACLE_HOME/network/admin
export TNS_ADMIN
PATH=$ORACLE_HOME/bin:/opt/bin:$PATH
export PATH
LD_LIBRARY_PATH_64=$ORACLE_HOME/lib: $LD_LIBRARY_PATH_64:/opt/jdk/jdk1.6.0_20/jre/lib/sparc
export LD_LIBRARY_PATH_64
.
.
.

```

5 As the obiee user, launch the scheduler configuration utility.

```

$ cd Oracle-BI-Install-dir/setup
$ . ./sa-init64.sh
$ schconfig

```

6 Use the schconfig utility to set the following parameters:

- Set the Data Source Name to the scheduler database service name in the `tnsnames.ora` file.
- Set the User Name and Password to the user name and password that you use to access the scheduler database.
- Set the Scheduler Script Path and Default Script Path to locations that reside on a global file system.
- To simplify setup and to avoid having to use certificates, set the Administrator Password to null.
- Set Participant in Cluster to False.
- Set the SAW Machine Name to the logical hostname of the Presentation Services tier.

The `schconfig` utility modifies the `BI_DATA_DIRECTORY/scheduler/config/instanceconfig.xml` file.

7 Register the BI scheduler resource type.

```
# clresource type register ORCL.obiee_scheduler
```

8 Create the BI scheduler resource.

```

# clresource create -g bi-svr-rg \
-t ORCL.obiee_scheduler \
-p Run_64_bit=True \
-p resource_dependencies=bi-svr-hasp-rs,bi-svr-lh-rs \
-p BI_INSTALL_DIRECTORY=/failover/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/failover/obiee/OracleBIData \
bi-sch-rs

```

9 Verify the status of the resource.

```

# clresource status bi-sch-rs
=== Cluster Resources ===
Resource Name      Node Name          State      Status Message
-----
bi-sch-rs          phys-red1:red-zone1 Online      Online - Service is online.
                   phys-red2:red-zone2 Offline     Offline

```

▼ How to Define a Multi-Master Configuration for BI Scheduler

A multi-master BI Scheduler configuration requires primary and secondary BI Cluster Controllers to be configured as explained in “[BI Cluster Controller Configuration](#)” on page 30, although strictly speaking, the secondary BI Cluster Controller is optional when creating an Oracle Solaris Cluster configuration. The BI Cluster Controller is responsible for directing requests coming in from the Presentation Services clients to the active BI scheduler.

1 As user `oracle` (or any non-root user), install the Oracle Database client software on the servers that will host the scheduler.

The schedulers need access to the Oracle Database client libraries and `tnsnames.ora` file to be able to connect to the scheduler database.

2 Create and configure a database to hold the scheduler job information.

For more information, see the section “Creating Oracle BI Scheduler Database and Tables for Specific Databases” in *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* available from http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm.

3 Configure the scheduler.

See the section “Configuring Oracle BI Scheduler Under UNIX” in the *Oracle Business Intelligence Infrastructure Installation and Configuration Guide* available from http://download.oracle.com/docs/cd/E10415_01/doc/nav/portal_booklist.htm.

4 Edit the scheduler user parameters file to provide appropriate Solaris information.

In order to access the Oracle client libraries, the scheduler uses parameters set in the `BI_INSTALL_DIRECTORY/setup/user.sh` file. Uncomment and provide appropriate values for the Solaris entries.

```
$ cat ~/OracleBI/setup/user.sh
.
.
.
ORACLE_HOME=/export/home/oracle/app/oracle/product/11.1.0/client_1
export ORACLE_HOME
TNS_ADMIN=$ORACLE_HOME/network/admin
export TNS_ADMIN
PATH=$ORACLE_HOME/bin:/opt/bin:$PATH
export PATH
LD_LIBRARY_PATH_64=$ORACLE_HOME/lib: $LD_LIBRARY_PATH_64:/opt/jdk/jdk1.6.0_20/jre/lib/sparc
export LD_LIBRARY_PATH_64
.
.
.
```

5 As the `obiee` user on each cluster node, launch the scheduler configuration utility.

```
$ cd Oracle-BI-Install-dir/setup
$ ./sa-init64.sh
$ schconfig
```

6 On each cluster node, use the `schconfig` utility to set the following parameters:

- Set the Data Source Name to the scheduler database service name in the `tnsnames.ora` file.
- Set the User Name and Password to the user name and password that you use to access the scheduler database.
- Set the Scheduler Script Path and Default Script Path to locations that reside on a global file system.
- To simplify setup and to avoid having to use certificates, set the Administrator Password to null.
- Set Participant in Cluster to True.
- Set the SAW Machine Name to the physical host name of the Presentation Services component.

The `schconfig` utility modifies the `BI_DATA_DIRECTORY/scheduler/config/instanceconfig.xml` file.

7 Create the resource.

```
# clresource create -g mm-bi-svr-rg \
-t ORCL.obiee_scheduler \
-p BI_INSTALL_DIRECTORY=/export/home/obiee/OracleBI \
-p BI_DATA_DIRECTORY=/export/home/obiee/OracleBIData \
-p resource_dependencies=mm-bi-svr-hasp-rs \
mm-bi-sch-rs
```

8 Verify the resource status.

```
# clresource status mm-bi-sch-rs
=== Cluster Resources ===
Resource Name   Node Name           State   Status Message
-----
mm-bi-sch-rs    phys-red1:red-zone1 Online  Online
                 phys-red2:red-zone2 Online  Online
```

Verifying the HA for Oracle BI EE and Configuration

After you install, register, and configure HA for Oracle BI EE, verify the HA for Oracle BI EE installation and configuration. This verification determines whether the HA for Oracle BI EE data service makes your components highly available.

▼ How to Verify the HA for Oracle BI EE Installation and Configuration

- 1 Become superuser on a cluster node that is to host the Oracle Business Intelligence Enterprise Edition component.**

2 Ensure all the Oracle BI EE resources are online.

For each resource, perform the following steps.

a. Determine whether the resource is online.

```
# cluster status -t rg,rs
```

b. If the resource is not online, bring it online.

```
# clresource enable obiee-biserver-resource
```

3 For a failover service configuration, switch the resource group to another cluster node, such as *node2*.

```
# clresourcegroup switch -n node2 obiee-biserver-resource-group
```

4 Confirm that the resource is now online on *node2*.

```
# cluster status -t rg,rs
```

Tuning the HA for Oracle BI EE Fault Monitors

The HA for Oracle BI EE fault monitors verify that the following components are running correctly:

- BI Presentation Services components – sawserver and javahost processes
- BI Server components – nqserver and nqsserver health (via probe)
- BI Cluster Controller components – nqscclustercontroller process
- BI Scheduler components – nqsscheduler process

Each HA for Oracle BI EE fault monitor is contained in the resource that represents each component. You create these resources when you register and configure HA for Oracle BI EE. For more information, see [“Registering and Configuring HA for Oracle BI EE” on page 20](#).

System properties and extension properties of these resources control the behavior of the fault monitor. The default values of these properties determine the preset behavior of the fault monitor. The preset behavior should be suitable for most Oracle Solaris Cluster installations. Therefore, you should tune the fault monitor *only* if you need to modify this preset behavior.

Tuning the fault monitors involves the following tasks:

- Setting the interval between fault monitor probes
- Setting the time-out for fault monitor probes
- Defining the criteria for persistent faults
- Specifying the failover behavior of a resource

For more information, see [“Tuning Fault Monitors for Oracle Solaris Cluster Data Services” in *Oracle Solaris Cluster Data Services Planning and Administration Guide*](#).

Debugging HA for Oracle BI EE

Each component of HA for Oracle BI EE has a `debug_level` resource property that enables you to activate debugging for Oracle BI EE resources.

▼ How to Activate Debugging for HA for Oracle BI EE

- 1 In `/etc/syslog.conf`, redirect `daemon.debug` to a suitable file.

For example:

```
daemon.debug      /var/tmp/daemon_debug.log
```

Tip – Use a tab character to separate the `daemon.debug` label from the file name.

- 2 Set the `debug_level` resource property to 1 or 2.

```
# clresource set -p debug_level-1 resource_name
```
- 3 Restart the `syslogd` daemon.

```
# svcadm restart system-log
```
- 4 Check `/var/adm/messages` in both global zone and local zone.
- 5 Check `/var/opt/ORCLscobiee/message_log.resource-name`.

The BI Server resource file contains the output of the BI Server probe. The probe output can be useful if the password is wrong.

HA for Oracle BI EE Extension Properties

The extension properties that you can set for each HA for Oracle BI EE resource type are listed in the following sections:

- “[ORCL.obiee_cluster_controller](#) Extension Properties” on page 39
- “[ORCL.obiee_presentation_service](#) Extension Properties” on page 40
- “[ORCL.obiee_scheduler](#) Extension Properties” on page 41
- “[ORCL.obiee_server](#) Extension Properties” on page 42

See the [r_properties\(5\)](#) man page and the [rg_properties\(5\)](#) man page for details about all of the system-defined properties.

ORCL.obiee_cluster_controller Extension Properties

BI_Install_Directory

Type string (required). This property is set to the absolute path to the Oracle BI software installation directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

BI_Data_Directory

Type string (required). This property is set to the absolute path of the Oracle BI software data directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

Run_64_bit

Type Boolean (required). If this property is set to TRUE, then the 64-bit version of the binary is run. If set to FALSE, then the 32-bit version of the binary is run

Default: TRUE

Values: TRUE or FALSE

Tunable: When disabled

Cluster_Controller_Role

Type enumerated (required). This property determines whether the resource represents a primary or secondary cluster controller.

Default: PRIMARY

Values: PRIMARY or SECONDARY

Tunable: When disabled

Debug_Level

Type enumerated (optional). This property specifies the debug_level.

Default: 0

Values: 0, 1, or 2

Tunable: Any time

ORCL.obiee_presentation_service Extension Properties

BI_Install_Directory

Type string (required). This property is set to the absolute path of the Oracle BI software installation directory. The home directory contains the OracleBI and OracleBIData subdirectories.

Default: None

Values: Absolute full path name

Tunable: When disabled

BI_Data_Directory

Type string (required). This property is set to the absolute path of the Oracle BI software data directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

Run_64_bit

Type Boolean (required). If this property is set to TRUE, then the 64-bit version of the binary is run. If set to FALSE, then the 32-bit version of the binary is run

Default: TRUE

Values: TRUE or FALSE

Tunable: When disabled

Debug_Level

Type enumerated (optional). This property specifies the debug_level.

Default: 0

Values: 0, 1, or 2

Tunable: Any time

ORCL.obiee_scheduler Extension Properties

BI_Install_Directory

Type string (required). This property is set to the absolute path to the Oracle BI software installation directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

BI_Data_Directory

Type string (required). This property is set to the absolute path of the Oracle BI software data directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

Run_64_bit

Type Boolean (required). If this property is set to TRUE, then the 64-bit version of the binary is run. If set to FALSE, then the 32-bit version of the binary is run

Default: TRUE

Values: TRUE or FALSE

Tunable: When disabled

Debug_Level

Type enumerated (optional). This property specifies the debug_level.

Default: 0

Values: 0, 1, or 2

Tunable: Any time

ORCL.obiee_server Extension Properties

BI_Install_Directory

Type string (required). This property is set to the absolute path to the Oracle BI software installation directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

BI_Data_Directory

Type string (required). This property is set to the absolute path of the Oracle BI software data directory.

Default: None

Values: Absolute full path name

Tunable: When disabled

Run_64_bit

Type Boolean (required). If this property is set to TRUE, then the 64-bit version of the binary is run. If set to FALSE, then the 32-bit version of the binary is run

Default: TRUE

Values: TRUE or FALSE

Tunable: When disabled

BI_PROBE_USER

Type string (optional). This property contains the Business Intelligence (BI) user name to use for probing the health of the BI server.

Default: None

Values: string

Tunable: When disabled

BI_PROBE_PASSWORD

Type string (optional). This property contains the Business Intelligence (BI) user password to use for probing the health of the BI server.

Default: None

Values: string

Tunable: When disabled

Debug_Level

Type enumerated (optional). This property specifies the debug_level.

Default: 0

Values: 0, 1, or 2

Tunable: Any time

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