Oracle® Business Intelligence Management Pack

Getting Started Guide

10*g* Release 4 (10.2.0.4)

E12639-02

July 2008

ORACLE®

Oracle Business Intelligence Management Pack Getting Started Guide, 10*g* Release 4 (10.2.0.4)

E12639-02

Contents

Preface

This guide provides a brief introduction to Oracle Business Intelligence Management Pack.

This preface contains the following topics:

- Intended Audience
- Related Documents
- Documentation Accessibility

Intended Audience

This guide is meant for system administrators who use Oracle Business Intelligence Management Pack.

Related Documents

For more information, refer to *Enterprise Manager Grid Control Installation and Basic Configuration Guide* and *Enterprise Manager Advanced Configuration Guide* available at:

http://www.oracle.com/technology/documentation/oem.html

Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at

http://www.oracle.com/accessibility/

Accessibility of Code Examples in Documentation

Screen readers may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, some screen readers may not always read a line of text that consists solely of a bracket or brace.

Accessibility of Links to External Web Sites in Documentation

This documentation may contain links to Web sites of other companies or organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these Web sites.

TTY Access to Oracle Support Services

Oracle provides dedicated Text Telephone (TTY) access to Oracle Support Services within the United States of America 24 hours a day, seven days a week. For TTY support, call 800.446.2398.

1

Oracle Business Intelligence Management Pack Getting Started Guide

This chapter provides a brief introduction to Business Intelligence Management Pack. It guides you through the process of discovering and configuring Business Intelligence Suite Enterprise Edition targets and discusses key features in the Business Intelligence Management Pack. It covers the following sections:

- Introduction to the Business Intelligence Management Pack

- Discovering and Configuring Oracle Business Intelligence Targets

- Configuration Management

- Application Performance Management

- Service Level Management

- Oracle Business Intelligence Performance Metrics

- Troubleshooting the Business Intelligence Management Pack

1.1 Introduction to the Business Intelligence Management Pack

This section covers the following topics:

- Functional Overview

- Monitored Targets

- Additional Sources of Information

- System Requirements

- Installing Oracle Enterprise Manager Grid Control 10g Release 4

- Prerequisites for Discovering Oracle Business Intelligence Targets in Enterprise Manager (in Windows)

- Prerequisites for Discovering Oracle Business Intelligence Targets in Enterprise Manager (in Linux)

1.1.1 Functional Overview

The Oracle Business Intelligence Management Pack extends the Enterprise Manager Grid Control management capabilities to Oracle Business Intelligence Suite Enterprise Edition (OBIEE) and Oracle Business Intelligence Data-Warehouse Administration Console (DAC) Servers. This pack leverages on Enterprise Manager Grid Control solutions including configuration management, application performance

management, grid automation, and service level management to help customers achieve high level availability and performance for their Business Intelligence applications.

With the BI pack, you can:

- Manage multiple Business Intelligence environments from a single console.

- Monitor the health and capacity utilization of your Business Intelligence environment as well as the underlying hosts running the Business Intelligence application.

- Measure performance and usage metrics for critical Business Intelligence components, get proactive alerts, and diagnose performance problems.

- View detailed analysis of Interactive Dashboards such as Dashboard usage, failed dashboards, top dashboards by resource usage and top users by resource usage over different time periods.

- Set up alerts (based on key performance metrics) and view performance charts for the Data-Warehouse Administration Console (DAC) Server. View summary of completed ETL runs with information about the Duration, Total Steps, Completed Steps, Stopped/Failed Steps, and Running Steps for all completed runs. View logs of all completed ETL routines.

- Track configuration changes through audit trails, take snapshots to store configurations, and compare server configurations.

- Define services from Business Intelligence applications and track service levels.

- Create customized reports to report and share vital information for BI applications.

When combined with other Enterprise Manager packs and plug-ins for managing Oracle and non-Oracle database, middleware, network devices and hosts, you can achieve complete end-to-end management of your entire Oracle Business Intelligence environment.

1.1.2 Monitored Targets

The monitored targets in the Business Intelligence Management Pack are summarized in Table 1–1. These targets have been added to Enterprise Manager to manage the Oracle Business Intelligence application.

Table 1–1 Licensed Targets in Business Intelligence Management Pack

Enterprise Manager Target Type	Purpose
Oracle BI Analytics Server	Representation of Oracle BI Analytics Server providing access to metrics, alerts, charts, dashboard usage reports and configuration management.
Oracle BI Presentation Server	Representation of Oracle BI Presentation Server providing access to metrics, alerts, charts, customized reports and configuration management.
Oracle BI Scheduler	Representation of Oracle BI Scheduler providing access to metrics, alerts, customized reports and configuration management.
Oracle BI Cluster Controller	Representation of Oracle BI Cluster Controller providing access to metrics, alerts, customized reports and configuration management.
Oracle BI DAC Server	Representation of Oracle BI DAC Server providing access to metrics, alerts, historical ETL performance charts, ETL performance reports and configuration management.

Table 1–1 (Cont.) Licensed Targets in Business Intelligence Management Pack

Enterprise Manager Target Type	Purpose
Oracle BI Suite EE	Representation of all BI-EE components providing access to alerts/policy violations and the ability to start/stop/restart any of the BI-EE components.
Generic Service	Generic service modeled with Oracle BI Analytics Server, Oracle BI Scheduler, Oracle BI Presentation Server, Oracle BI Cluster Controller, and the underlying hosts as the key components providing a service oriented view of the monitored BI-EE targets: ■ Define availability based on system health of monitored BI-EE targets ■ Define expected service level based on performance metrics ■ View charts and set up notification alerts based on usage and performance metrics for any of the monitored BI-EE targets ■ View a topology chart showing the service dependencies based on the key components defined
System	Representation of a system oriented view of monitored BI-EE targets providing access to alerts, charts, blackouts, jobs activity, and topology view.
Host	Representation of hosts running the Business Intelligence application providing access to metrics, alerts, performance charts, remote file editor, host commands and customized reports.

1.1.3 Additional Sources of Information

Refer to the documentation listed in Table 2 for additional information about the Business Intelligence Management Pack. Because the pack leverages many of Enterprise Manager's underlying capabilities, the base documentation is applicable in many cases.

Table 1–2 Additional Documentation for the Business Intelligence Management Pack

Book	Chapter	Information
Enterprise Manager Grid Control Quick Start Guide (http://download.oracle.com/docs/cd/B16240_01/doc/user.102/b28678/toc.htm)	All	Introduction to Enterprise Manager Grid Control - It is highly recommended that you go over this piece of documentation first if you are new to using Oracle Enterprise Manager
Enterprise Manager Concepts Guide (http://download.oracle.com/docs/cd/B16240_01/doc/em.102/b31949/toc.htm)	All	Overall information on the capabilities of Oracle Enterprise Manager Grid Control
	System Monitoring	Setting up Thresholds and Alerts
	Service Management	Defining Service Level Objective, Running Service Level Reports
	Managing Deployments Chapter	Viewing Configurations, Comparing Configurations, Taking Configuration Snapshots, Using Configuration Policy
	Host and Third-Party Target Management	Monitoring the Operating System and the Host
	Information Publisher	Creating Custom Reports

Table 1–2 (Cont.) Additional Documentation for the Business Intelligence Management

Book	Chapter	Information
Enterprise Manager Grid Control Installation and Basic Configuration (`http://download.oracle.com/docs/cd/B16240_01/doc/install.102/e10953/toc.htm`)	All	Installing Enterprise Manager Grid Control Server and Agents
Enterprise Manager Advanced Configuration (`http://download.oracle.com/docs/cd/B16240_01/doc/em.102/e10954/toc.htm`)	All	Advanced Configuration Topics
	Sizing and Maximizing the Performance of Oracle Enterprise Manager	Capacity Planning and Tuning for Oracle Enterprise Manager

1.1.4 System Requirements

The Business Intelligence Management Pack is supported on the same platforms that support Oracle Enterprise Manager Grid Control 10g Release 4 (10.2.0.4).

Currently, the Business Intelligence Management Pack is supported with Oracle Business Intelligence Suite Enterprise Edition (EE) 10.1.3.2, 10.1.3.2.1, 10.1.3.3 and all later versions. To learn about Oracle BI-EE system requirements, visit the System Requirements and Supported Platforms page

(`http://download.oracle.com/docs/cd/E10415_01/doc/bi.1013/e10417.pdf`).

The Business Intelligence Management Pack also supports the Oracle BI DAC Server, which is provided in the Oracle Business Intelligence Applications installation. Currently, the BI Pack supports Oracle Business Intelligence Applications 7.9, 7.9.1, 7.9.2, 7.9.3 and 7.9.4. To learn about Oracle BI Applications system requirements, visit the System Requirements and Supported Platforms page (`http://download.oracle.com/docs/cd/E10783_01/doc/bi.79/e10920.pdf`).

1.1.5 Installing Oracle Enterprise Manager Grid Control 10g Release 4

Before you begin configuring Grid Control 10g Release 4 (10.2.0.4) to manage your Business Intelligence Management Pack components, you must install and configure Grid Control 10g Release 4 (10.2.0.4) on at least one host computer on your network.

Oracle recommends that you install the Grid Control components on their own host or hosts. For example, if the Business Intelligence Management Pack middle tier is installed on host1.us.oracle.com, then install and configure the Oracle Management Service and Oracle Management Repository on host2.us.oracle.com.

Install the Grid Control 10.2 Oracle Management Agent on every host that includes the components you want to manage with Grid Control.

> **Note:** Installing Enterprise Manager Grid Control 10g Release 4 requires any previous releases of Grid Control - that is any 10.2.0.x.0 installation, and upgrade to 10.2.0.4.0 release. If you do not have a previous release, but want a 10.2.0.4.0 Grid Control environment, then first install 10.2.0.1.0 Grid Control (10.2.0.2.0 for Windows), and then upgrade it to 10.2.0.4.0 - please see the README file for Enterprise Manager 10gR4: (http://www.oracle.com/technology/software/products/oem/htdoc s/gridR4_10204_readme.html).The installation of the Grid Control 10g Release 4 (10.2.0.4) agent does not require a previous release of Grid Control 10g agent. The installation file for OEM agent is found on Oracle OTN Web site: (http://www.oracle.com/technology/software/products/oem/htdoc s/agentsoft.html)

See Also:

Oracle Enterprise Manager Basic Installation and Configuration for Oracle Enterprise Manager Grid Control 10.2 (`http://download.oracle.com/docs/cd/B16240_ 01/doc/install.102/e10953/toc.htm`)

All installation files can be accessed on Oracle's Technology Web site: `http://www.oracle.com/technology/index.html`

1.1.6 Prerequisites for Discovering Oracle Business Intelligence Targets in Enterprise Manager (in Windows)

Before you start monitoring Oracle Business Intelligence targets in Enterprise Manager, you must perform the following tasks:

■	Install the Enterprise Manager Grid Control 10g Release 4 (10.2.0.4)

The information required to perform these steps is available in Chapter 3 of the *Oracle Enterprise Manager Grid Control Installation and Basic Configuration Guide* (`http://download.oracle.com/docs/cd/B16240_ 01/doc/install.102/e10953/toc.htm`).

■	Install Grid Control 10g Release 4 (10.2.0.4) Agent on each of the hosts.

Install an Agent in each of the hosts where Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, Oracle BI Cluster Controller, and Oracle BI DAC Server run on.

The information required to perform these steps is available in Chapter 3 of the *Oracle Enterprise Manager Grid Control Installation and Basic Configuration Guide*

If you would like to monitor additional targets, such as MS IIS and databases supporting Oracle Business Intelligence, and you have the proper license for monitoring these targets, then install the Agent on these hosts as well.

■	After Enterprise Manager Grid Control OMS and Agents are installed, complete the following steps before initiating the discovery process:

1.	Install an Oracle database or use an existing Oracle database to host the Scheduler tables and S_NQ_ACCT table for usage statistics.

> **Note:** The Oracle database used by Enterprise Manager Grid Control (Oracle Management Repository) can be used for the Scheduler tables and S_NQ_ACCT table for usage statistics. It is, however, recommended that a separate database be used for large deployments.
>
> The BI Management Pack currently supports Oracle databases only for the Scheduler and Usage Statistics tables.

2. Create an account called S_NQ_SCHED (the recommended account name) on the Oracle database and run the following scripts to create the necessary tables:

```
SQL> conn system/password@oraclebi

Connected.

SQL> create user s_nq_sched

2 identified by password

3 default tablespace users

4 temporary tablespace temp

5 quota unlimited on users

6 /

SQL> grant connect

2 , create table

3 , create view

4 , create procedure

5 to s_nq_sched

6 /

SQL> conn s_nq_sched/password@oraclebi

Connected.

SQL> @C:\OracleBI\server\Schema\SAJOBS.Oracle.sql

Table created.

...

Commit complete.

SQL> @C:\OracleBI\server\Schema\SAACCT.Oracle.sql

Table created.

Index created.

...

Commit complete.
```

3. Update the TNSNAMES.ORA file (located in <Oracle Database Home>\NETWORK\ADMIN) to include an entry that points to the S_NQ_SCHED user account.

```
S_NQ_SCHED =

(DESCRIPTION =
```

```
(ADDRESS_LIST =

(ADDRESS = (PROTOCOL = TCP)(HOST = <hostname>)(PORT = 1521))

)

(CONNECT_DATA =

(SID = oraclebi)

(SERVER = DEDICATED)

)

)
```

Alternatively, you may use the "Net Manager" tool - provided in the Configuration and Migration Tools for the Oracle database - to create a new service for the S_NQ_SCHED user account.

4. Open Microsoft ODBC Data Source Administrator to set up an ODBC System Data Source to point through the S_NQ_SCHED service created in the TNSNAMES.ORA file.

Figure 1–1   ODBC Data Source Administrator
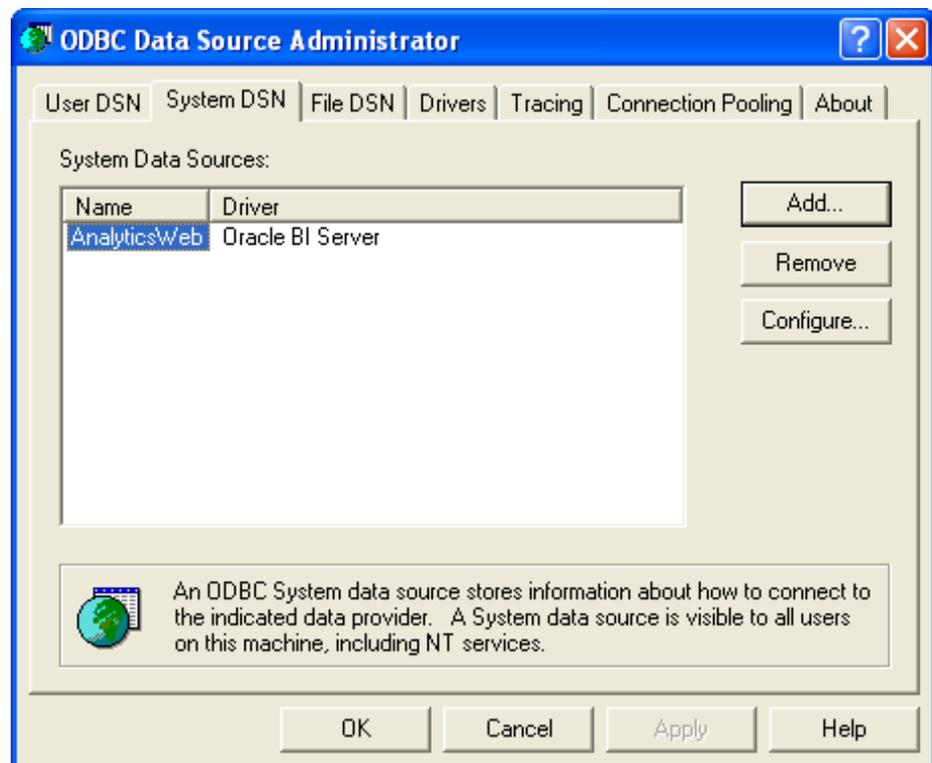
5. Select the System DSN sub-tab and click **Add** to create a new Data Source. Select Microsoft ODBC for Oracle or Oracle ODBC Driver. See screenshots below for Oracle ODBC Driver Configuration.

Figure 1–2   Oracle ODBC Driver Configuration
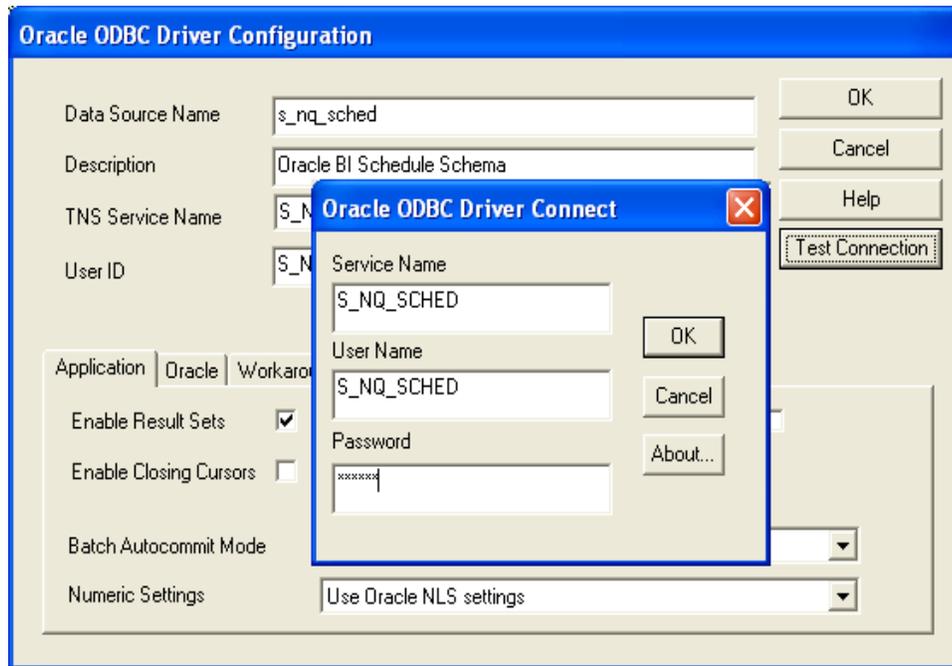
6. Open Oracle BI Administration Tool and import the S_NQ_SCHED schema from the Oracle database into the physical layer of the Oracle BI repository being used. To import a physical schema from an Oracle database, follow these steps:

   - In the Administration Tool, select File > Import, and then select **from Database**

   - In the Select Data Source dialog box, select an appropriate connection type from the Connection Type drop-down list - for example, OCI 10g/11g. Write down the TNS name associated with the S_NQ_SCHED service (as defined in the TNSNAMES.ORA file). Type a valid user name and password for the data source and click **OK** to continue.

Figure 1–3   Select Data Source
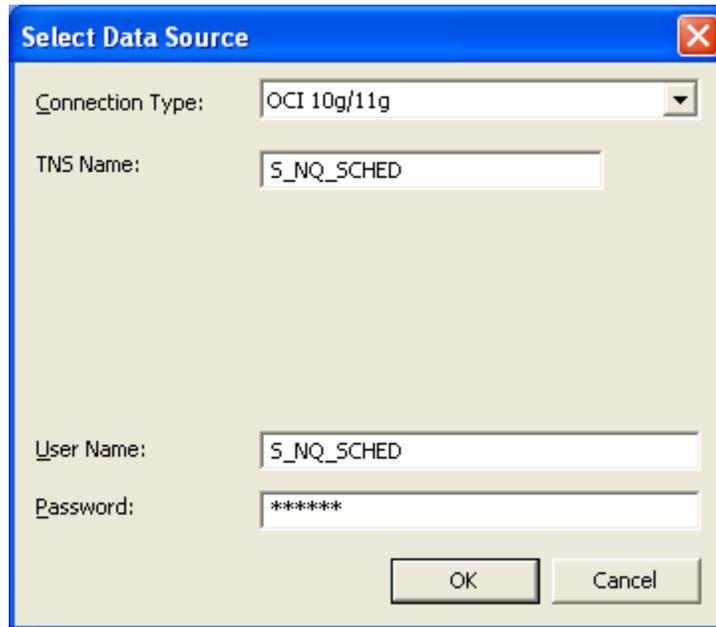
- In the Import dialog box, select the S_NQ_SCHED schema. After you select all the objects you want to import, click **Import** or drag and drop them into the Physical Layer.

Figure 1–4   Import
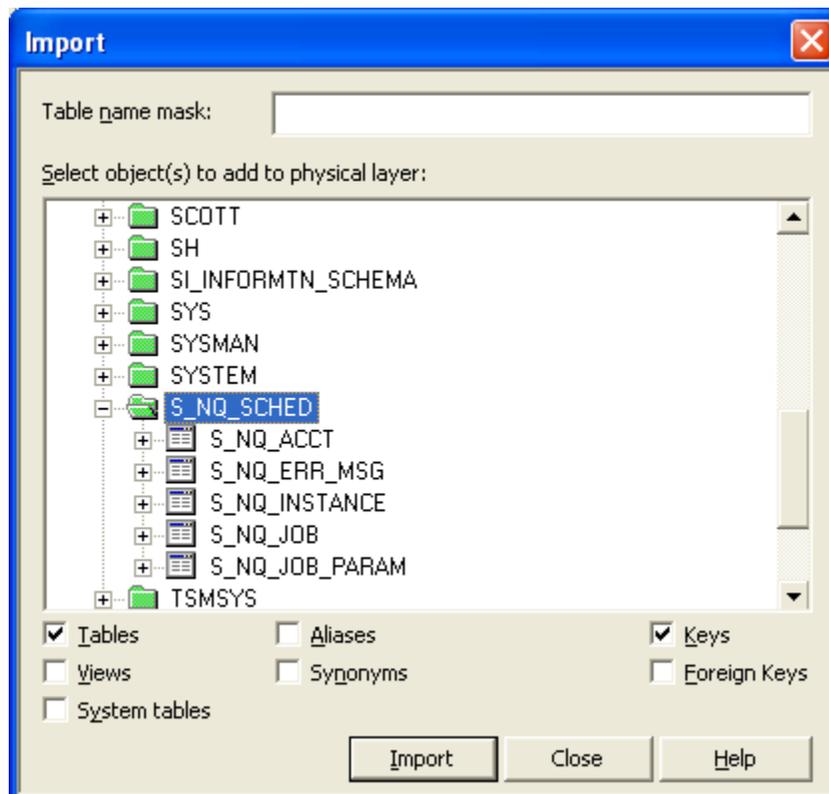
> **Note:** For more information about importing a physical schema from relational data sources, please refer to Chapter 4 of the Oracle Business Intelligence Server Administration Guide (`http://download.oracle.com/docs/cd/E10415_01/doc/bi.1013/b31770.pdf`)

7. Once the S_NQ_SCHED schema has been appropriately imported into the Physical Layer, click **Connection Pool** and verify that all the connection settings are correct.

Figure 1–5   Connection Pool
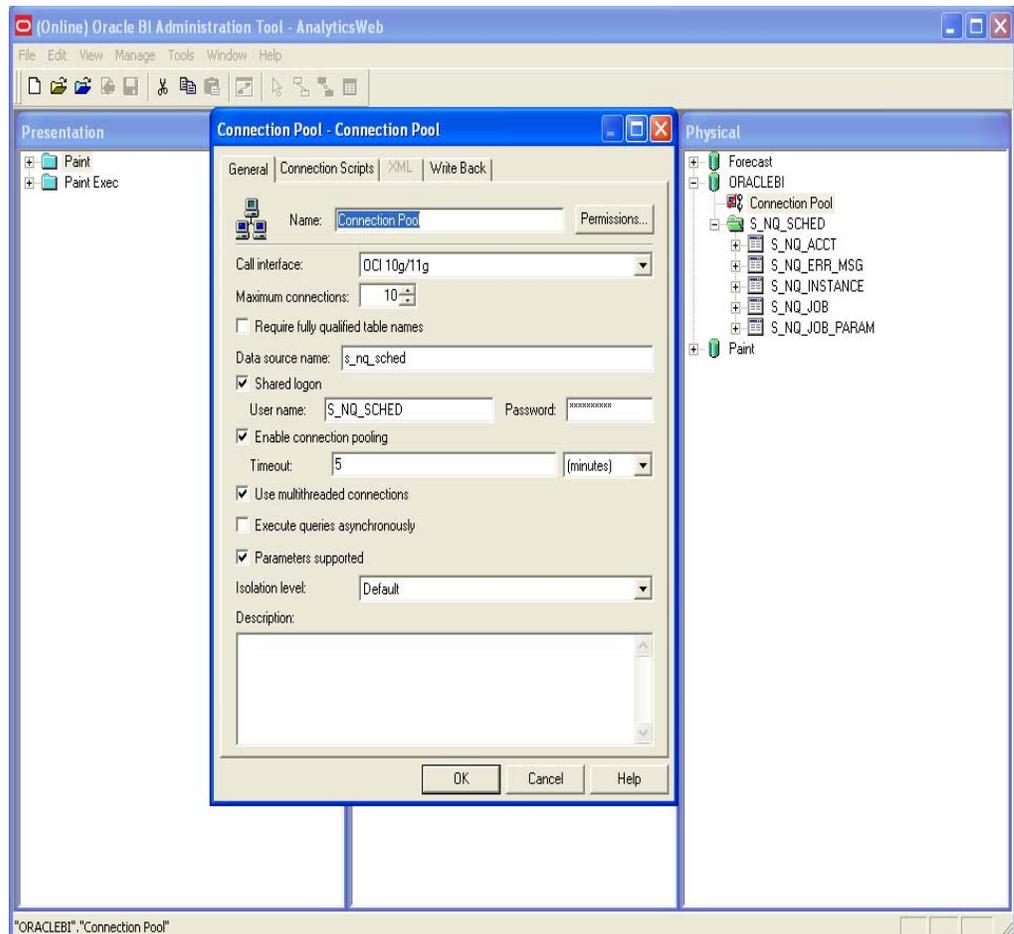
> **Note:**   For more information on setting up Connection Pools, refer to
> Chapter 4 of the Oracle Business Intelligence Server Administration
> Guide (`http://download.oracle.com/docs/cd/E10415_`
> `01/doc/bi.1013/b31770.pdf`).

8. Update the OracleBI\server\Config\NQSConfig.INI file to enable usage tracking for the BI Server.

- Set ENABLE to "YES",

- Set DIRECT_INSERT to "YES"

- Update the PHYSICAL_TABLE_NAME and CONNECTION_POOL parameters to provide information about the Oracle database and the table to be used for usage tracking. Make sure that the Database and Connection Pool specified are appropriately configured in the Physical Layer in the Oracle BI Administration Tool.

Figure 1–6   Oracle BI Administration Tool

```
[ USAGE_TRACKING ]

ENABLE                          = YES;

//======================================================================
//   Parameters used for writing data to a flat file (i.e. DIRECT_INSERT = NO).
//
STORAGE_DIRECTORY               = "<full directory path>";
CHECKPOINT_INTERVAL_MINUTES     = 5;
FILE_ROLLOVER_INTERVAL_MINUTES  = 30;
CODE_PAGE                       = "ANSI";  // ANSI, UTF8, 1252, etc.
//
//======================================================================

DIRECT_INSERT                   = YES;

//======================================================================
//   Parameters used for inserting data into a table (i.e. DIRECT_INSERT = YES).
//
PHYSICAL_TABLE_NAME             = "ORACLEBI"."S_NQ_SCHED"."S_NQ_ACCT";  |
CONNECTION_POOL                 = "ORACLEBI"."Connection Pool" ;
BUFFER_SIZE                     = 10 MB ;
BUFFER_TIME_LIMIT_SECONDS       = 5 ;
NUM_INSERT_THREADS              = 5 ;
MAX_INSERTS_PER_TRANSACTION     = 1 ;
//
//======================================================================
```

9. Update the Scheduler Database Configuration Settings to point to the Oracle database and provide the login credentials. Run the schconfig.exe file to update the configuration settings:

```
cd C:\OracleBI\server\bin\
```

```
run schconfig
```

10. Update the database configuration of the BI Job Manager. From Windows, select
    Programs, Oracle Business Intelligence, and then Job Manager.

Figure 1–7   Scheduler Configuration
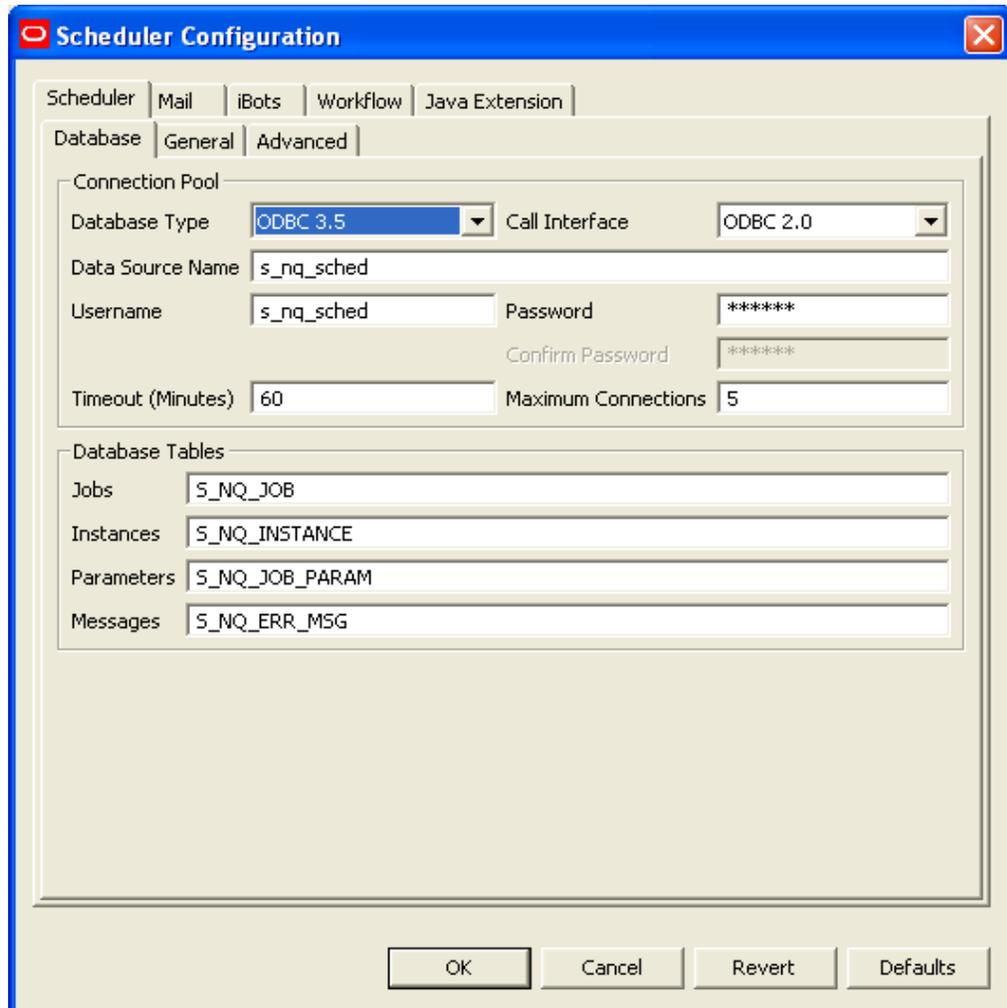
11. Re-start all the Oracle BI-EE services and make sure they are running properly.

12. Oracle BI Analytics Server and Oracle BI Presentation Server expose performance counters via the JMX agent. Several settings have to be changed in the JMX agent before the discovery process.

    Open the OracleBI\systemsmanagement\runagent.cmd file in Notepad.

    Replace `-Dcom.sun.management.jmxremote` with the following:

    ```
    -Dcom.sun.management.jmxremote
    -Dcom.sun.management.jmxremote.port=9980
    -Dcom.sun.management.jmxremote.authenticate=false
    -Dcom.sun.management.jmxremote.ssl=false
    ```

13. Start the JMX agent - OracleBI\systemsmanagement\runagent.cmd. Make sure that all the Oracle BI-EE services are running - OC4J, Oracle BI Java Host, Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, and Oracle BI Cluster Controller (if applicable).

```
cd C:\OracleBI\systemsmanagement\
runagent.cmd
```

1.1.7 Prerequisites for Discovering Oracle Business Intelligence Targets in Enterprise Manager (in Linux)

Before you start monitoring Oracle Business Intelligence targets in Enterprise Manager, you must perform the following tasks:

- Install the Enterprise Manager Grid Control 10g Release 4 (10.2.0.4)

The information required to perform these steps is available in Chapter 3 of the *Oracle Enterprise Manager Grid Control Installation and Basic Configuration Guide* (http://download.oracle.com/docs/cd/B16240_01/doc/install.102/e10953/toc.htm).

- Install Grid Control 10g Release 4 (10.2.0.4) Agent on each of the hosts.

Install an Agent in each of the hosts where Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, Oracle BI Cluster Controller, and Oracle BI DAC Server run on.

The information required to perform these steps is available in Chapter 3 of the *Oracle Enterprise Manager Grid Control Installation and Basic Configuration Guide*

If you would like to monitor additional targets, such as MS IIS and databases supporting Oracle Business Intelligence, and you have the proper license for monitoring these targets, then install the Agent on these hosts as well.

- After Enterprise Manager Grid Control OMS and Agents are installed, complete the following steps before initiating the discovery process:

1. Install an Oracle database or use an existing Oracle database to host the Scheduler tables and S_NQ_ACCT table for usage statistics.

> **Note:** TThe BI Management Pack currently supports Oracle databases only for the Scheduler and Usage Statistics tables.

2. Create an account called S_NQ_SCHED (the recommended account name) on the Oracle database and run the following scripts to create the necessary tables:

```
SQL> conn system/password@oraclebi
Connected.
SQL> create user s_nq_sched
2 identified by password
3 default tablespace users
4 temporary tablespace temp
5 quota unlimited on users
6 /
SQL> grant connect
2 , create table
3 , create view
```

```
4 , create procedure

5 to s_nq_sched

6 /

SQL> conn s_nq_sched/password@oraclebi

Connected.

 SQL>
@/ora/biee/10.1.3.2/OracleBI/server/Schema/SAJOBS.Oracle.sql

Table created.

...

Commit complete.

SQL>
@/ora/biee/10.1.3.2/OracleBI/server/Schema/SAACCT.Oracle.sql

Table created.

Index created.

...

Commit complete.
```

3. On the Windows server hosting the Oracle Business Intelligence client tools (for example, Oracle BI Administration Tool), update the TNSNAMES.ORA file (located in <Oracle Database Home>\NETWORK\ADMIN) to include an entry that points to the S_NQ_SCHED user account.

```
S_NQ_SCHED =

(DESCRIPTION =

(ADDRESS_LIST =

(ADDRESS = (PROTOCOL = TCP)(HOST = <hostname>)(PORT = 1521))

)

(CONNECT_DATA =

(SID = oraclebi)

(SERVER = DEDICATED)

)

)
```

   Alternatively, you may use the "Net Manager" tool - provided in the Configuration and Migration Tools for the Oracle database - to create a new service for the S_NQ_SCHED user account.

4. On the Windows server hosting the Oracle Business Intelligence client tools (e.g. Oracle BI Administration Tool), open Microsoft ODBC Data Source Administrator to set up an ODBC System Data Source to point through the S_NQ_SCHED service created in the TNSNAMES.ORA file. Select the "System DSN" sub-tab and click on "Add" to create a new Data Source. Select either "Microsoft ODBC for Oracle" or "Oracle ODBC Driver". Enter the requested credentials and test the database connection.

5. On the Windows server hosting the Oracle Business Intelligence client tools, open Oracle BI Administration Tool and import the S_NQ_SCHED schema from the

Oracle database into the physical layer of the Oracle BI repository being used. To import a physical schema from an Oracle database, follow these steps:

- In the Administration Tool, select **File**, **Import**, and then select **from Database**

- In the Select Data Source dialog box, select an appropriate connection type from the Connection Type drop-down list, for example, OCI 10g/11g. Enter the TNS name associated with the S_NQ_SCHED service (as defined in the TNSNAMES.ORA file). Type a valid user name and password for the data source and click **OK** to continue.

- In the Import dialog box, select the S_NQ_SCHED schema. After you select the objects to import, click **Import** or drag and drop them into the Physical Layer.

Note: For more information about importing a physical schema from relational data sources, please refer to Chapter 4 of the Oracle Business Intelligence Server Administration Guide (http://download.oracle.com/docs/cd/E10415_01/doc/bi.1013/b31770.pdf)

---

6. After importing the S_NQ_SCHED schema into the Physical Layer, click on **Connection Pool** and verify that all the connection settings are correct. Ensure that the Connection Pool settings are also appropriate for the Linux server hosting the Oracle BI Analytics Server - for instance, verify that the Call Interface selected is enabled on the Linux server as well (for example, JDBC OCI driver).

Note: For more information about setting up Connection Pools, please refer to Chapter 4 of the Oracle Business Intelligence Server Administration Guide.

---

7. Save the changes made on the BI Administration Tool by selecting **File** and then **Save**.

8. On the Linux server hosting the Oracle BI Analytics Server, update the OracleBI/server/Config/NQSConfig.INI file to enable usage tracking for the BI Server.

   - Set ENABLE to "YES",

   - Set DIRECT_INSERT to "YES"

   - Update the PHYSICAL_TABLE_NAME and CONNECTION_POOL parameters to provide information about the Oracle database and the table to be used for usage tracking. Make sure that the Database and Connection Pool specified are appropriately configured in the Physical Layer in the Oracle BI Administration Tool.

9. Update the Scheduler Database Configuration Settings (OracleBI/server/Bin/schconfig) to point to the Oracle database and provide the login credentials.

10. Re-start all the Oracle BI-EE services (OracleBI/setup) and make sure they are running properly.

11. Oracle BI Analytics Server and Oracle BI Presentation Server expose performance counters via the JMX agent. Several settings have to be changed in the JMX agent before the discovery process.

Open the OracleBI/systemsmanagement/runagent.sh file in a text editor (for exmaple, emacs). Replace `-Dcom.sun.management.jmxremote` with the following:

```
-Dcom.sun.management.jmxremote
-Dcom.sun.management.jmxremote.port=9980
-Dcom.sun.management.jmxremote.authenticate=false
-Dcom.sun.management.jmxremote.ssl=false
```

12. Start the JMX agent - OracleBI/systemsmanagement/runagent.sh. Make sure that all the Oracle BI-EE services are running - OC4J, Oracle BI Java Host, Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, and Oracle BI Cluster Controller (if applicable).

1.2 Discovering and Configuring Oracle Business Intelligence Targets

This section covers the following topics:

- Discovering Oracle Business Intelligence Suite Enterprise Edition (EE) Targets

- Refreshing an Existing Oracle BI-EE Suite

- Updating Monitoring Configuration for Individual BI-EE Targets

- Adding Oracle BI DAC Server Target

- Adding Two Oracle BI Presentation Servers in a Clustered Environment

- Adding Targets to the System Topology

- Removing Servers or Components from an Existing BI-EE Suite

- Adding a Group for Oracle Business Intelligence Targets

1.2.1 Discovering Oracle Business Intelligence Suite Enterprise Edition (EE) Targets

Enterprise Manager has a simple discovery wizard for Oracle Business Intelligence Suite Enterprise Edition targets. The Discovery wizard collects details about BI-EE targets including information about the hostname, Oracle BI Home, host login credentials, database credentials, and JMX agent designated port and login credentials.

After the Discovery wizard is complete, System and Service topologies are automatically generated by introspecting a BI-EE environment, and entered into Enterprise Manager's integrated configuration management database (CMDB).

To discover Oracle Business Intelligence Suite Enterprise Edition targets, perform the following steps:

1. Log on to Enterprise Manager. Navigate to the **Targets** tab and select **All Targets** sub-tab.

2. To discover a new BI-EE Suite environment, select **Oracle BI Suite EE** from the **Add** drop-down list and click **Go**.

Figure 1–8   All Targets

3. Enter the information requested for Oracle BI Presentation Server. Click Next after entering the necessary information.

- Suite Name: The name that you would like to give to the monitored Oracle BI-EE environment

- BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

- Agent Username: Host Administrator Username

- Agent Password: Host Administrator Password

Figure 1–9   Presentation Server
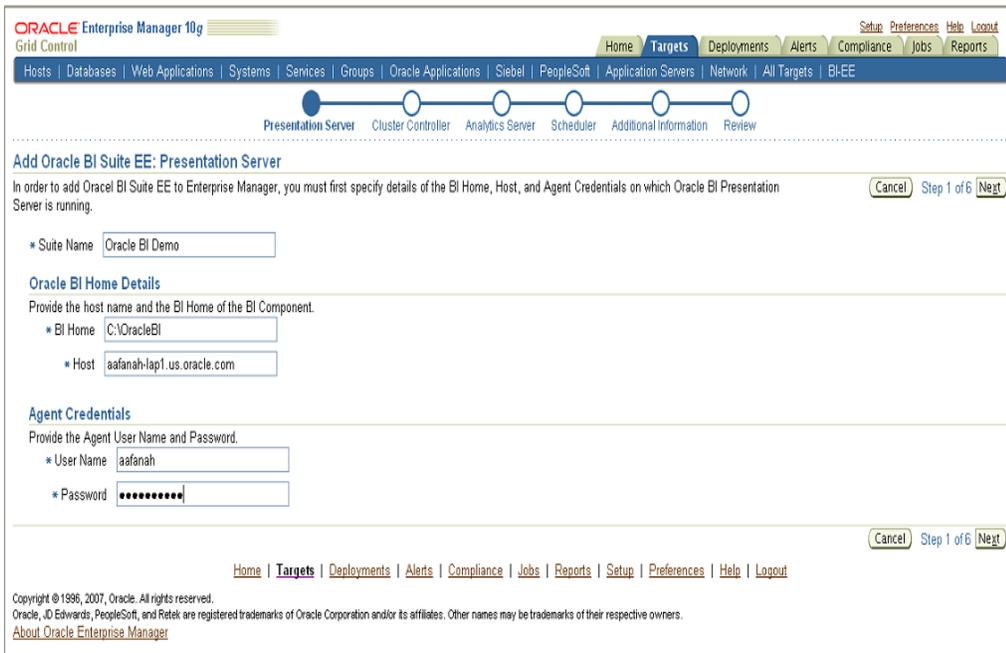
4. Enter the information requested for the Oracle BI Cluster Controller (if applicable). Click **Next** after entering the necessary information.

    ■   BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

    ■   Agent Username: Host Administrator Username

    ■   Agent Password: Host Administrator Password

5. Enter the information requested for the Oracle BI Analytics Server. Click **Next** after entering the necessary information.

    ■   BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

    ■   Agent Username: Host Administrator Username

    ■   Agent Password: Host Administrator Password

Figure 1–10   Analytics Server

6. Enter the information requested for the Oracle BI Scheduler. Click **Next** after entering the necessary information.

   ■ BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

   ■ Agent Username: Host Administrator Username

   ■ Agent Password: Host Administrator Password

Figure 1–11   Scheduler
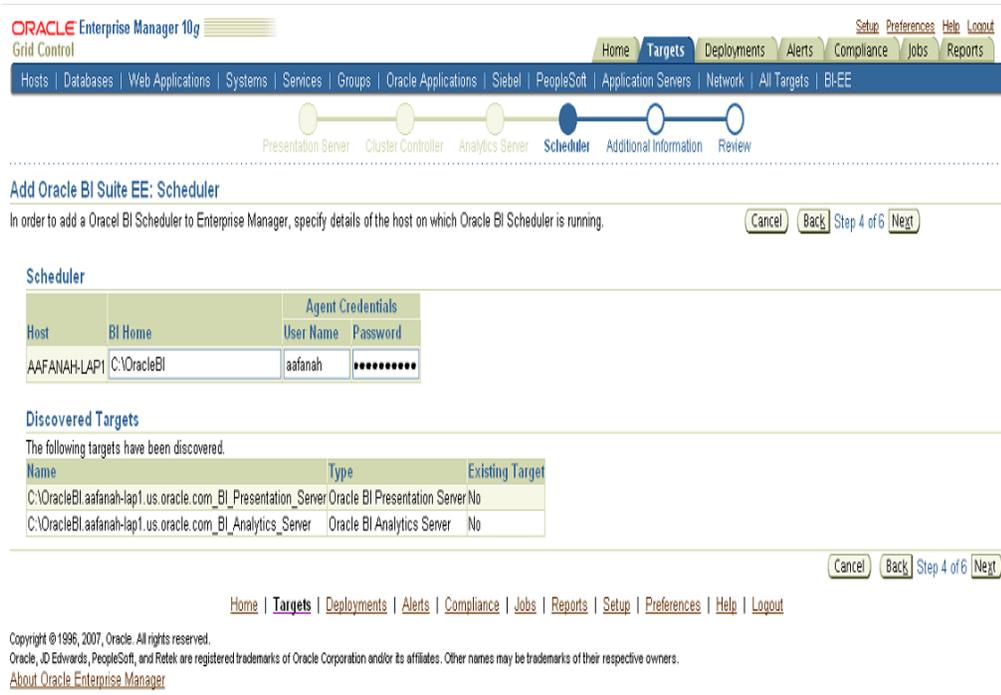
7. Enter the additional information requested (JMX and DB Credentials that are required to collect the metrics for the targets). Click **Next** after entering the necessary information.

   - JMX Port: 9980 - Check the C:\OracleBI\systemsmanagement\runagent.cmd file to verify that the port has been appropriately changed.

   - JMX Username: oc4jadmin (Default)

   - JMX Password: welcome1 (Default)

     Database Credentials:

   - Connect String: jdbc:oracle:oci:@<hostname>:<port>:<Database SID>

   - Class String: oracle.jdbc.driver.OracleDriver

   - Username: The username created to access the BI Scheduler tables and S_NQ_ACCT table for usage statistics in the Oracle database - for exmaple, S_NQ_SCHED

   - Password: The password for the S_NQ_SCHED account

Figure 1–12   Additional Information

8. This is the final review screen before finalizing the discovery. Review all the information entered and make sure that it is accurate. Click **Finish** to complete the discovery.

Figure 1–13   Review
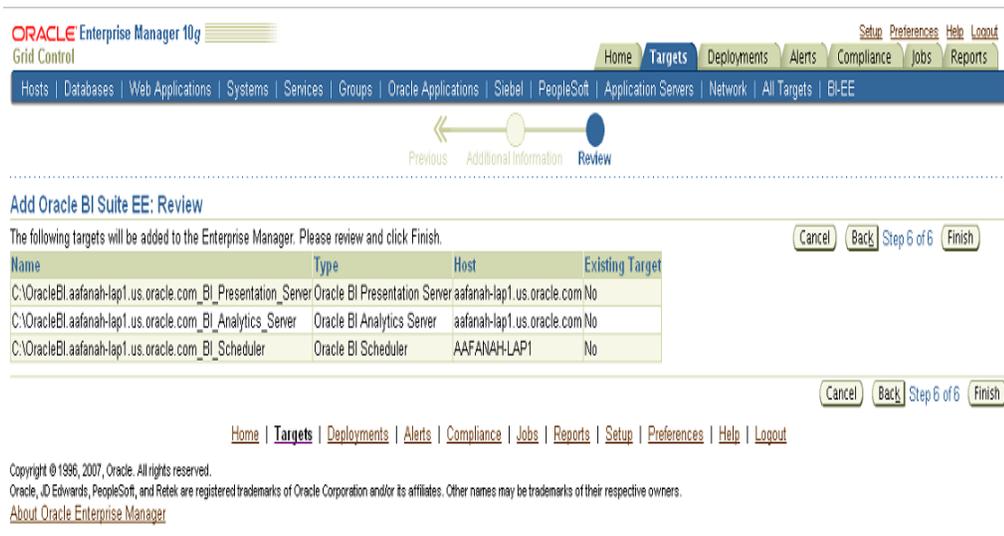
1.2.2 Refreshing an Existing Oracle BI-EE Suite

After Oracle BI Suite EE targets are discovered in Enterprise Manager, you may refresh the discovery of Oracle BI Suite EE at anytime. Refreshing an existing Oracle BI Suite EE can be used to enter new details about BI-EE targets including information about the hostname, Oracle BI Home, host login credentials, database credentials, and JMX agent designated port and login credentials.

Perform the following steps to refresh an existing Oracle BI Suite EE:

1. From the Enterprise Manager Console, click the **Targets** tab.

2. Click the **All Targets** tab.

3. Click on the target of type **Oracle BI Suite EE**.

4. Click **Refresh Suite**.

5. Follow the instructions in the section Discovering Oracle Business Intelligence Suite Enterprise Edition (EE) Targets

Figure 1–14   Status
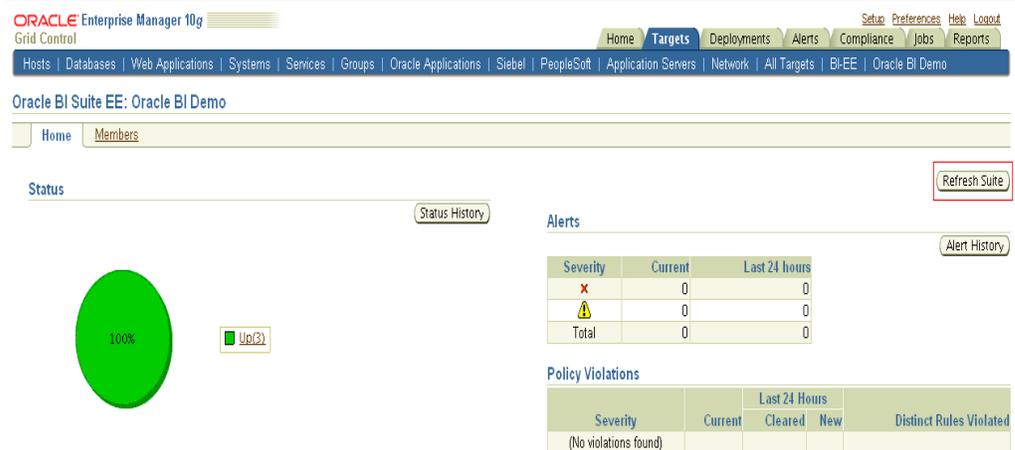
1.2.3 Updating Monitoring Configuration for Individual BI-EE Targets

In addition to refreshing the discovery of an existing Oracle BI Suite EE, you may also update the monitoring configuration details for individual BI-EE targets. Updating monitoring configuration details for individual BI-EE targets can be used to enter new details about BI-EE targets including information about the hostname, Oracle BI Home, host login credentials, database credentials, and JMX agent designated port and login credentials. For instance, if the database credentials for accessing the Oracle BI Scheduler tables changed, then you can update the monitoring configuration details for Oracle BI Scheduler using the Monitoring Configuration page.

Perform the following steps to update monitoring configuration for individual BI-EE targets:

1. From the Enterprise Manager Console, click the **Targets** tab.

2. Click the **All Targets** tab.

3. Click on the Oracle BI-EE target that you would like to update. For instance, if you would like to update Oracle BI Scheduler, click on the target of type **Oracle BI Scheduler**.

4. Click on the **Monitoring Configuration** link in the **Related Links** section.

5. Update the information and click **OK** to save the new changes.

Figure 1–15   Properties
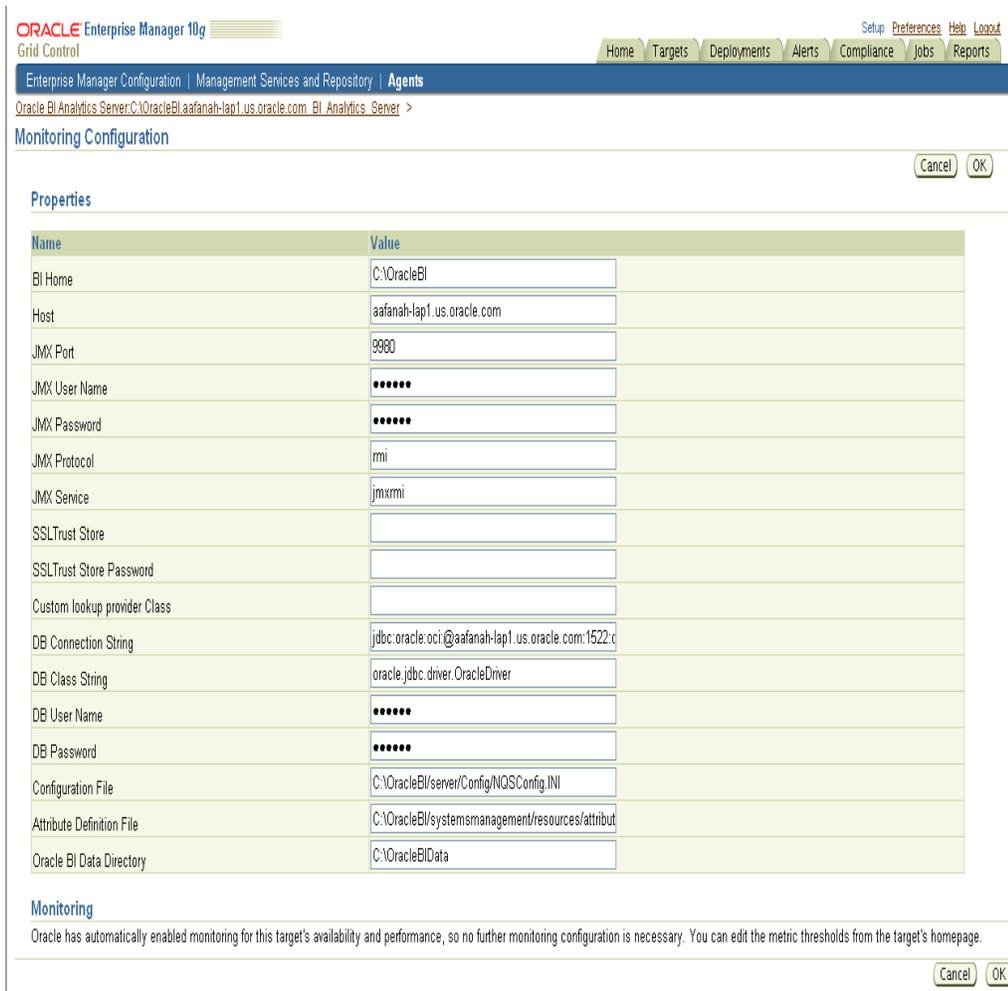
1.2.4 Adding Oracle BI DAC Server Target

In addition to Oracle BI-EE targets, the Business Intelligence Management Pack supports Oracle BI DAC Server.

Perform the following steps to add Oracle BI DAC Server target to Enterprise Manager:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on the **Agent** that is running on the underlying host for Oracle Business Intelligence Applications. To search for Agent targets, you may select **Agent** from the **Search** dropdown list and click **Go**.

4. Select **Oracle BI DAC Server** from the **Add** dropdown list and click **Go**.

Figure 1–16   Agent Page

5. Enter the information requested for the Oracle BI DAC Server. Click **OK** after entering the necessary information.

    ■   BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

    ■   Agent Username: Host Administrator Username

    ■   Agent Password: Host Administrator Password

    ■   Connect String: jdbc:oracle:oci:@<hostname>:<port>:<Database SID>

    ■   Class String: oracle.jdbc.driver.OracleDriver

    ■   Repository Username = the username used to access the DAC database - for example, DAC

    ■   Password = the password used to access the DAC database

Figure 1–17   Add Oracle BI DAC Server
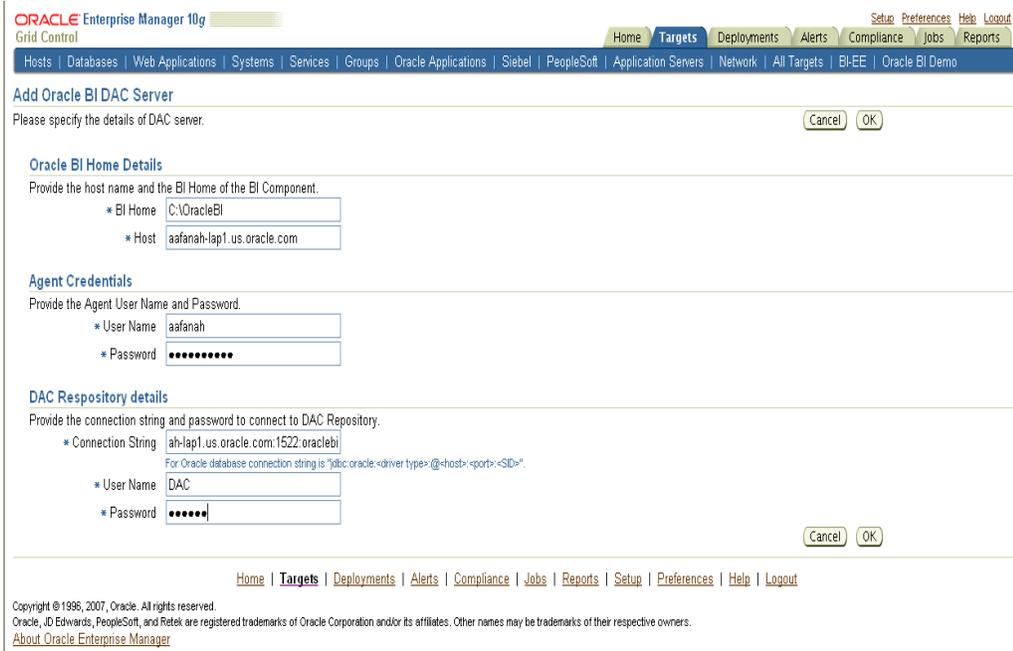
1.2.5 Adding Two Oracle BI Presentation Servers in a Clustered Environment

The Oracle BI Suite EE discovery wizard allows you to discover one Oracle BI Presentation Server. If you are running a clustered environment with two Oracle BI Presentation Servers, you may use the Oracle BI Suite EE discovery wizard to discover the first Presentation Server, and then add the second Presentation Server manually.

Perform the following steps to add a second Oracle BI Presentation Server target to Enterprise Manager:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on the **Agent** that is running on the underlying host for Oracle Business Intelligence Applications. To search for Agent targets, you may select **Agent** from the **Search** dropdown list and click **Go**.

4. Select **Oracle BI Presentation Server** from the **Add** dropdown list and click **Go**.

Figure 1–18   Agent Page

5. Enter the information requested for the Oracle BI Presentation Server. Click **OK** after entering the necessary information.

   ■ BI Home: The directory where Oracle BI is installed - for example, C:\OracleBI

   ■ Host: The hostname where Oracle BI Presentation Server is running

   ■ Admin Port Number: JMX Port - 9980 - Check the C:\OracleBI\systemsmanagement\runagent.cmd file to verify that the port has been appropriately changed.

   ■ JMX Username: oc4jadmin (Default)

   ■ JMX Password: welcome1 (Default)

   ■ Connection Protocol: rmi

   ■ Service Name: jmxrmi

   ■ You may skip SSL Trust Store, SSL Trust Store JMX Password, and Customer Lookup Provider Class if SSL is not enabled.

   ■ Config File: The configuration file for the Presentation Server (for example, C:\OracleBIData/web/config/instanceconfig.xml)

   ■ Attribute Definition File: The attribute definition file for the Presentation Server (for example, C:\OracleBI/systemsmanagement/resources/attribute-definitions.xml)

   ■ Oracle BI Data Directory: The Oracle BI Data directory (for example, C:\OracleBIData)

Figure 1–19 Add Oracle BI Presentation Server
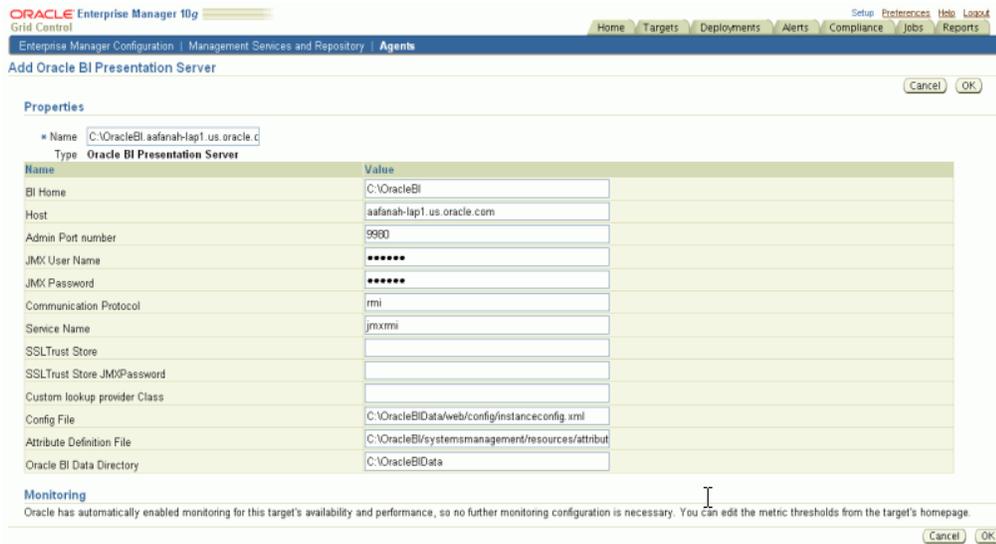
After discovering the Oracle BI Presentation Server, you can add the newly discovered target to the "System" topology. Follow the instructions in the Adding Targets to the System topology section.

1.2.6 Adding Targets to the System Topology

A target of type System is automatically created once the discovery wizard for Oracle BI Suite EE is completed. The Oracle BI target of type System is representation of a system oriented view of monitored Oracle BI targets providing access to alerts, charts, blackouts, jobs activity, and topology view. You may edit the list components that define the System target, which in turn, defines the key components critical for running the Oracle BI target of type Service. For more information about monitoring the BI environment from a service-oriented perspective, please view the Service Level Management section.

Perform the following steps to add Oracle BI Presentation Server target to the "System" topology:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI target of type **System** that represents the critical components in your Oracle environment. To search for System targets, you may select **System** from the **Search** dropdown list and click **Go**.

4. Click the **Edit System** link from the **Related Links** section.

5. Click the **Add** button and select the target to add to the System topology.

1.2.7 Removing Servers or Components from an Existing BI-EE Suite

After discovering Oracle Business Intelligence targets, you may manually remove individual targets. This will, however, delete the respective target information from the Enterprise Manager repository.

After that entry is deleted, Enterprise Manager does not monitor that target anymore. If you perform a manual refresh for the Oracle BI Suite EE, Enterprise Manager includes that target in the new system topology.

Perform the following steps for manually removing components from an existing enterprise are:

- Go to the **All Targets** tab, search for the server or component you want to delete, select the radio button next to the server or component name, and click **Remove**.

1.2.8 Adding a Group for Oracle Business Intelligence Targets

To obtain better accessibility to the Oracle Business Intelligence targets, you may wish to create a group to include all the monitored Business Intelligence targets as well as other licensed targets that support the Business Intelligence application (for example, databases, application servers, and so on).

Perform the following steps to create a Group target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. From the **Add** dropdown list, select **Group** and click **Go**.

4. In the **Members** section, select the Business Intelligence targets that you want to include by clicking **Add**.

Once the Group target has been appropriately added, you may also add a link to that group in the **Target Subtabs** section.

Perform the following steps to create a subtab for the newly created Business Intelligence group:

1. Click on the **Preferences** tab on the Enterprise Manager Console.

2. Click the **Target Subtabs** tab.

3. Move the newly created group from **Available Target Subtabs** to **Selected Target Subtabs**.

4. Click **Apply** when you are done.

By combining targets in a group, Enterprise Manager offers a wealth of management features that enable you to efficiently manage these targets as one group. Using the Group pages, you can:

- View a summary status of the targets within the group.

- Monitor outstanding alerts and policy violations for the group collectively, rather than individually.

- Monitor the overall performance of the group through performance charts.

- Perform administrative tasks, such as scheduling jobs for the entire group, or blacking out the group for maintenance periods.

- You can also customize the console to provide direct access to group management pages.

For more information about Group Management, refer to the *Enterprise Manager Concepts Guide*:

http://download.oracle.com/docs/cd/B16240_01/doc/em.102/b31949/toc.htm.

1.3 Configuration Management

This chapter explains how Enterprise Manager Grid Control simplifies the monitoring and management of Oracle BI targets in your enterprise through Configuration Management.

For more information about Configuration Management, please refer to the Enterprise Configuration Management section of the *Enterprise Manager Concepts Guide*:

http://download.oracle.com/docs/cd/B16240_
01/doc/em.102/b31949/toc.htm

Configuration Management allows you to view, save, track, compare, and search the configuration information stored in the Management Repository for the monitored Oracle BI targets. The ability to compare configuration settings is useful in diagnostic situations when administrators need to find out what parameter has changed, or how two servers or server components differ from each other. Configuration Management is also useful in achieving regulatory compliance cost effectively, as it could be extremely tedious and error prone to try to keep track of changes manually.

Note: The Business Intelligence Management Pack supports configuration management for all monitored Oracle BI targets excluding the host. The Configuration Management Pack for Non-Oracle Systems is needed to take advantage of configuration management features for the underlying hosts running the Oracle BI application.

This section covers the following topics:

- Collected Configurations
- Viewing Configurations
- Comparing Configurations
- Configuration History

1.3.1 Collected Configurations

The Business Intelligence Management Pack in Enterprise Manager Grid Control collects configuration information for all managed Oracle BI targets on the hosts that have a running Management Agent. The agent periodically sends the configuration information to the Management Repository over HTTP or HTTPS, allowing you to view up-to-date configuration information for your Oracle BI environment through Grid Control.

Table 1–3   Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
Oracle BI Server	- Product Version - Cache Configuration: Cache Enable (ENABLE) - Indicates whether cache is enabled Cache Replace Algorithm (REPLACE_ALGORITHM) - When cache is replaced this is the algorithm used to determine which cache entry to replace Max Rows Per Cache Entry (MAX_ROWS_PER_CACHE_ENTRY) - The maximum rows per entry in cache. 0 is unlimited size. Max Cache Entry Size (MAX_CACHE_ENTRY_SIZE) - The maximum size of each cache entry. Max Cache Entries (MAX_CACHE_ENTRIES) - The maximum number of cache entries before using REPLACE_ALGORITHM. Max Global Cache Entries (MAX_GLOBAL_CACHE_ENTRIES) - The maximum number of shared cache entries when cluster aware caching is turned on. Cache Poll Seconds (CACHE_POLL_SECONDS) - The number of seconds defining the interval when Analytic Server will check for shared cache. - Locale - The language selected for the Oracle BI environment - DB Dynamic Library: DB2CLI - DLL name of DBGateway DB2CLI35 - DLL name of DBGateway NQSXML - DLL name of DBGateway OCI10g - DLL name of DBGateway OCI7 - DLL name of DBGateway OCI8 - DLL name of DBGateway OCI8i - DLL name of DBGateway ODBC200 - DLL name of DBGateway ODBC350 - DLL name of DBGateway XMLA - DLL name of DBGateway - Optimization Flags: Strong Date Time Check (STRONG_DATETIME_TYPE_CHECKING) - TRUE or FALSE - Security: SSL - Whether Analytic Server uses SSL

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	■ Server:

Enable DB Hints (ENABLE_DB_HINTS) - Enable backend database hits

DISCONNECTED - When Oracle Business Intelligence Server is being run as part of OracleBI Disconnected Client, the DISCONNECTED parameter must be set to YES. The default is NO.

Client Management Thread Max (CLIENT_MGMT_THREADS_MAX) - The maximum number of client management threads (RPC)

Server Thread Stack Size (SERVER_THREAD_STACK_SIZE) - When a thread is created, this is how much memory is allocated for the thread stack size

DB Gateway Thread Range (DB_GATEWAY_THREAD_RANGE) - Minimum and Maximum number of threads in the global DB Gateway thread pool

RPC Service or Port Number (RPC_SERVICE_OR_PORT) - The RPC port that Analytic Server listens on

Max Session Limit (MAX_SESSION_LIMIT) - Maximum number of sessions allowed on this Analytic Server instance

Max Drill Down Info Cache Entries (MAX_DRILLDOWN_INFO_CACHE_ENTRIES) - The maximum number of drill down info objects to keep in memory

Server Thread Range (SERVER_THREAD_RANGE) - Number of threads in the primary execution thread pool

Max Drill Down Query Cache Entries (MAX_DRILLDOWN_QUERY_CACHE_ENTRIES) - The maximum number of drill down query objects to keep in memory

DB Gateway Thread Stack Size (DB_GATEWAY_THREAD_STACK_SIZE) - When a DB Gateway thread is created, this is how much memory is allocated for the thread stack size

Max Query Plan Cache Entries (MAX_QUERY_PLAN_CACHE_ENTRIES) - The maximum number of logical query plans to keep in memory

Cluster Participant (CLUSTER_PARTICIPANT) - Whether this Analytic Server is a member of a cluster

Max Expanded Sub Query Predicates (MAX_EXPANDED_SUBQUERY_PREDICATES) - The maximum number of sub query predicates

Sort Memory Size

Sort Buffer Increment Size

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
Oracle BI Presentation Server	■ Product Version ■ BI Presentation Server Configuration Parameters: Config Directory Connection Expire Minutes - Defines the length of idle time the connection between the Oracle BI Presentation Server and the Oracle BI Analytics Server is maintained before this connection is closed. This setting stands for idle time only. Connection Max Concurrent Establish - The maximum number of threads that can be concurrently attempting to create connections to Oracle BI Analytics Server. Any threads beyond this number generate an error with an exception. Corda Lib Dir CSV Charset Data Dir - Data Directory Debug Startup Default Message Dir Disconnected - When Oracle Business Intelligence Server is being run as part of OracleBI Disconnected Client, the DISCONNECTED parameter must be set to YES. The default is NO. Disconnected Dir - The location on disk of the Disconnected Applications directory Drillability Status - If FALSE the Oracle BI Presentation Server does not inquire about the drill status of columns and results cannot be drilled. Improves performance by not calling NQS Get Level Drillability, if the installation does not require drilling capability DSN AnalyticsWeb Enable 508 - Shows download menus as separate links Entropy Source - Controls whether to use high quality or standard quality entropy source for session IDs. If the requested source is not available, the server does not start. Note also that the high quality entropy source is likely to be significantly slower and may involve more blocking Force Refresh - Causes Presentation Server to always bypass its cache. To be used only for testing - may have serious performance implications Harden XSS Java Home Java Host Dir Java Host Lib Dir Java Max Heap PDF Java Min Heap PDF License File - Location of license file Log Config File Log Config Node Maintenance Mode - Causes Presentation Server to start in maintenance mode - primarily for OnDemand Maximum Content-Disposition Filename Length - Sets the maximum length of Content-Disposition filename parameter permissible. Anything over this length is truncated. As this length refers to the final encoded value in the header, the actual number of Unicode characters in the filename may vary Maximum Follow Links Max Tickets LifeTime Minutes - Controls expiration of tickets used by external processes for security

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
Oracle BI Presentation Server	Minimum PDF Size
	Msg CRC Checking
	On Demand Answers - Set to true for On Demand deployment. Affects some UI generation and program behavior
	PDF Lib Directory
	PDF Server Service String
	PDF Threads
	Persistent Storage Dir - The location where Oracle BI Presentation Server stores iBot deliveries. At startup, Oracle BI Presentation Server attempts to create this directory
	Persistent Storage State
	Disconnected Application Repository
	ResDir - Specifies the physical location of the primary resource files of Oracle BI Presentation Server (resource files that ship with the product and not files that are customized for each customer). If specified a full path must be provided. Note also that Oracle BI Presentation Server must have permission to read this path. If this is a network share then the administrator must ensure that the user under which Oracle BI Presentation Server is running has read access to the share as well as read access to the file system the share is exported from. If this value is specified and is different from the physical location of the Oracle BI Presentation Server DLL files then URL\ResourceVirtualPath must be specified.
	SA Root Dir
	SAW Root Dir
	Search ID Expire Minutes
	System Subject Area - Whether or not a system subject area exists and should be used - Temporary file directory
	UI Default Timeout Minutes - Controls timeout on HTTP server threads
	Unaccess Running Timeout Minutes - If a running query has not been accessed for this amount of time the query is cancelled. This handles the case where the user is at the "Searching" screen and goes elsewhere abandoning the search. Do not make this too small because often the user might want to go elsewhere and come back to the search later
	Use PDF Server
	Use Replication - Controls whether replication is enabled
	Web DLL
	XML External Directory
	Preloading of ODBC Driver
	Allowed Languages
	Allowed Locale

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	■ BI Presentation Server Display Configurations
	Allow Remember Password - Enables or disables the functionality to 'remember' user passwords. A value other than "True" disables the capability
	Collapsible Sections Default - Determines whether dashboard sections are collapsible
	Cube Max Populated Cells - The maximum number of populated cells in the Pivot Table. If this maximum is exceeded, the user receives an error when rendering the pivot table
	Cube Max Records - The maximum number of records returned by a query for the Pivot Table engine to process. This roughly governs the maximum number of cells that can be populated in a pivot table (unpopulated cells in a sparse pivot table do not count). If this maximum is exceeded, the user receives an error when rendering the pivot table
	Default Skin
	Default Style
	Dashboard Inline Load - Controls whether dashboard loads inline or with a page refresh
	Dashboard Max Before Menu - Controls how many dashboards will display in the banner before switching to menu dashboards
	Dashboard Show Inline - Shows the hidden iframe used for dashboard updates
	Disable PivotTable Auto Preview
	NewCursor Wait Seconds - Determines the duration for which the server waits for results after the initial request before returning the Search page to the browser. You can set a higher value (such as 3 seconds) to avoid page refreshes if the majority of queries are not returned in a second. If you run performance tests, some test implementations function efficiently only if this setting is very high (such as 36000 seconds)
	OldCursor Wait Seconds - Determines the duration the server waits for results after subsequent requests before refreshing the Search page to the browser. It may be useful to set this value higher (such as 60 seconds) to avoid page refreshes
	ShowPage Tabs Always - Determines whether the dashboard page tabs are shown even if the current page is hidden
	Show Section Headings Default - Determines whether the dashboard section headings are shown by default
	Portal Banner Height - Determines the height of the portal banner frame displayed in Intelligence Dashboards. This is an implementation-wide setting, so all portal style sheets must anticipate this value
	Prompt Drop Down Max Values - The maximum number of rows that can appear in the drop-down list of prompts
	ResultRow Limit - The maximum number of rows that can appear in the table view
	Default Rows Displayed - Sets the default rows for each page when the table view is viewed in browser and when none is specified by the user
	Default Rows Displayed In Delivery - Sets the default rows for each page when the table view is delivered
	Default Rows Displayed In Download - Sets the default rows for each page when the table view is downloaded to Excel
	Max Accounts Per Page
	Max Visible Columns - Sets the maximum number of columns to be displayed in a Pivot View
	Max Visible Pages - Sets the maximum number of page choices (or pages in PDF) to be displayed in a Pivot View
	Max Visible Rows Sets the maximum number of rows to be displayed in a Pivot View
	Max Visible Sections - Sets the maximum number of sections to be displayed in a Pivot View

Table 1–3 (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	Max Default Values - The maximum number of default values for dashboard prompts (multi-select control)
	Max DropDown Values - The maximum number of rows that can appear in the drop-down list of prompts
	Reload Inline - Controls whether to use the inline load when doing prompt constrain or clicking Go button
	Max Items Per Page
	■ BI Presentation Server Client Configurations
	Auto Flush Enabled
	Auto Flush Threshold
	Client Session Expire Minutes - Defines the idle time before Oracle BI Presentation Server deletes the user's client (browser) session information from its memory. This session includes user-specific state information such as request cache, dashboard page state, subject area information, connection information, and so on
	Cookie Domain - Domain for which the cookies apply. This setting is only for Web experts
	Cookie Expire - Cookie Lifetime in minutes
	Cookie Path
	Cookie Secure - Secure cookie Lifetime in minutes
	Default Timeout Minutes - Determines the default thread timeout used for long-running operations on worker threads
	Logon Expire Minutes - Time after which a user is automatically logged off (unless the user has clicked Remember Password). To disable this you must the value greater than ClientSessionExpireMinutes
	Username Cookie Name - Cookie used to remember the username
	Password Cookie Name - Cookie name used for the password cookie
	Persist Cookies - True or False
	Session ID Cookie Name - Cookie name used for session IDs (session cookie)
	Session ID Entropy Source Quality - Controls whether to use high quality or standard quality entropy source for session IDs. If the requested source is not available, the server does not start. Note also that the high quality entropy source is likely to be significantly slower and may involve more blocking
	Impersonator
	SSO Client Header
	SSO Enabled
	SSO Server Variable
	SSO Strip Windows Domain
	Absolute Command URL Prefix - Determines how Oracle BI Presentation Server generates absolute URLs to the ISAPI extension. If a value is explicitly specified, it must be of the form protocol:////server//path for example the complete virtual path to Oracle BI Presentation Server
	Command Name - Determines how Oracle BI Presentation Server generates URLs for static resources such as images, script files, style sheets, (and other user specified files). If a value is explicitly specified, it must be of the form protocol:server. If a virtual path is specified, it is deleted. If no value is specified, then this defaults to protocol:server from URL\AbsoluteCommandURLPrefix. Administrators can use this setting to designate a separate Web server for serving static resources and reduce the load on the main server. This prefix is used for all resources that have a fully qualified virtual path. If a resource file has a relative virtual path of the form "Path//file" then the prefix used is the same as that used for commands to the Oracle BI Presentation Server ISAPI extension

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	Customer Resource Physical Path - Specifies the physical location of resource files that are not part of a default installation (includes styles/skins customized for customers). If specified, a full path must be provided. Note that Oracle BI Presentation Server must have permission to read from this path. If this is a network share, then the administrator must make sure that the user under which Oracle BI Presentation Server is running has read access to the share as well as read access to the file system the share is exported from
	Customer Resource Virtual Path - This setting overrides the virtual path used for resource files that are not part of a default installation
	Force Absolute Command URL
	Force Absolute Resource URL
	Resource Physical Path - Specifies the physical location of Oracle BI Presentation Server's primary resource files (resource files that ship with the product and not files that are customized for each customer). If specified, a full path must be provided. Note also that Oracle BI Presentation Server must have permission to read this path. If this is a network share, then the administrator must ensure that the user under which Oracle BI Presentation Server is running has read access to the share as well as read access to the file system the share is exported from. If this value is specified and is different from the physical location of the Oracle BI Presentation Server DLL files, the URL\ResourceVirtualPath must be specified
	Resource Server Prefix - Designates a separate Web server to deliver static resources thereby reducing the load on the main Web server. This prefix is used for the resources that have a fully qualified virtual path of the form "//Path//file". If a resource file has a relative virtual path of the form "Path//file", the prefix used is the same used for commands to the Oracle BI Presentation Server extension
	Resource Virtual Path - This setting overrides the virtual path used for Oracle BI Presentation Server's primary resource files. To generate relative URLs, the virtual path defaults to "Res" assuming that the resource folder is present under the same virtual directory as the Oracle BI Presentation Server DLL files. To generate absolute URLs, the value of URL\AbsoluteCommandURLPrefix is used. If a value is specified, it must be a fully qualified virtual path. If a slash mark (//) is not specified, one is added. Note that if a value is specified here, then these resource files and customer defined resource files must be served from the same Web server
	■ BI Presentation Server Cache Configurations
	Cache Banner Dashboard List
	Cache LowMemory Threshold MB - Memory threshold (in megabytes). When the query cache exceeds this value, the application cleans up older cache entries
	Cache Max Entries - CacheMaxEntries is roughly the maximum number of open record sets the Oracle BI Presentation Server keeps open at a time. The minimum value is 3. For substantial implementations, increase this value to1000 or higher. The main factor that affects its size is the memory consumption
	Cache Max ExpireMinutes - Sets the maximum duration an entry in the query cache can exist before it is removed. The Default is one hour. CacheMinUserExpireMinutes can make an entry for a particular user last longer than CacheMaxExpireMinutes. A cache entry may be removed before one hour if many queries are being run (this value is only a maximum)
	Cache Min ExpireMinutes - Sets the minimum amount of time a cache entry can exist in the query cache before it is removed
	Cache Minimum Memory Threshold MB - Memory threshold (in megabytes) beyond which the query cache no longer accepts new queries until sufficient memory has been recovered
	Cache Min User Expire Minutes - Sets the minimum amount of time a cache entry remains for a user after being viewed. A cache entry is not removed for a specific user for this amount of time after the user has last used the cache entry. For example, if CacheMaxExpireMinutes is set for one hour and the user logs in again during the 59th minute, the entry still exists for that user for an additional 10 minutes
	Cache Refresh Optimize - Causes duplicate requests to piggy-back on each other

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	Max Lifetime Minutes - The maximum lifetime in minutes of a cache entry in the Column Info metadata cache (regardless of when it was last accessed)
	Unused Expire Minutes - The number of minutes before unused entries in the Column Info metadata cache are purged
	■ BI Presentation Server Marketing Configurations
	Marketing File System - File path used by Oracle BI Marketing to share output list files
	Marketing FunctionShip Fixed Random - If set to TRUE the SQL generator issues SQL so that the Oracle BI Analytics Server can function. The function ship is specific to Fixed Random Sampling in Segment Trees
	Marketing FunctionShip Pct Random - If set to TRUE the SQL generator issues SQL so that the Oracle BI Analytics Server can function. The function ship is specific to Percentage Random Sampling in Segment Trees
	Marketing Jobs Log DetailLevel
	Marketing Jobs LogSize - Maximum number of jobs in the job history log. When the maximum is reached the oldest 25% are timed out
	Marketing Jobs Wait Seconds - Duration between successive checks on the status of a Marketing job run from the User Interface. The jobs include: Purge and List Format Preview//List Generation, Saved Result Set Creation (in the Segments UI or the Segment Trees UI), Segment Counts, and Segment Tree Counts. The wait-refresh cycles are meant to keep the browser from timing out while waiting on the jobs to complete
	Marketing Preview Path - File path where preview and output list files are written
	Marketing Preview Size - Number of default records shown in the List Format preview UI. This configuration key can be overridden in the UI for the preview job
	Marketing Qualify Numeric Data
	Marketing Use BOM - If set to FALSE the list generatMiniDumpion files do not contain the BOM characters at the file start
	Marketing Wrap Column Headers - If set to FALSE, column headers are not wrapped in text qualifiers. This applies only to delimited file formats
	Mktg Cache Temp CreateSQL - If using temporary tables, this key specifies the parametrized SQL statement to create the table. The parameter @{TempTableName} contains the table name (unique name generated internally by the Marketing Server)
	Mktg Cache Temp DropSQL - If using temporary tables, this specifies the parametrized SQL statement to drop the table. The parameters @{TempTableName} contains the table name
	Mktg Cache TempInsertSQL - If using temporary tables, this key specifies the parametrized SQL statement to move from temporary to cache table. The parameters @{TempTableName} contains the table name (unique name generated internally by the Marketing Server). The parameter @{PhysicalTableName} contains the cache table name (also set internally by Marketing server)
	Mktg Cache Temp TableName Prefix - Prefix to the temporary table name used above. The Marketing server picks only the first two characters of the prefix specified
	Mktg Cache Use Temp Table - If set to TRUE, the Marketing Server uses an intermediary temporary table (a different one for each transaction) to store cache values before moving it to the cache table

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	■ BI Presentation Server Alerts Configurations:
	Content Delivery Mode
	Debug Delivery Email
	Default Delivery Disposition
	Default Delivery Format - Allowed values: html, pdf, excel, excel2000, text, and csv. Format used when a delivery format has been left as device default
	Embed Resources Inline - If true, CSS style sheets are copied into HTML pages. If false, the CSS style sheets are included as attachments and are referenced from the HTML pages
	Enabled
	Force 7bit ASCII Attachment Names
	IBot Connect String
	Ignore Webcat Delivery Profiles
	MHTML Mime Type
	Schedule Server - Element with attributes: ssl, schCredAlias, ccsPrimary, ccsPrimaryPort, ccsSecondary, ccsSecondaryPort
	Send IBot Connect String
	Session Cleanup Frequency Seconds - If an iBot session goes idle for this value, then it is closed and released. This is to guarantee steady state memory consumption in the face of either SASch crashing or other network problems
	Session Timeout Seconds
	UpperCase Recipient Names
	Use ForwardOnly CursorFor SystemSA
	■ BI Presentation Server Charts Configurations:
	Axis Limits Fudge Factor - Factor used when computing the minimum and maximum values for the axes
	Axis Limits Overscan Limit - Another factor used for computing the minimum and maximum values for the axes
	Cache Directory - Sets the location Oracle BI Presentation Server uses as temporary storage for cache of image files as well as the corresponding image map files
	Default Image Type - Sets the default image type to be used for charts. The available choices are FLASH, SVG, and PNG. Flash and SVG images provide the greatest degree of interactivity. PNG images currently support no interaction such as drilling and navigation
	Default Interaction - Determines the default "interaction" behavior of Oracle BI Presentation Server charts. The possible values are: (a) Drill; (b) Navigate; and (c) None. If the value is set to Drill, charts are by default created with drilling capability. If the value is Navigate, charts are set up to navigate to the value of Charts\DefaultNavigationPath. If this value is set to None, charts are by default non-interactive. For example, clicking on a chart (or region of a chart) does not display anything. Note that this can always be overridden through the user interface
	Default Navigation Path - If the value of Charts\DefaultInteraction is set to Navigate, this setting specifies the default URL to which the charts navigate. Otherwise this value is ignored
	Delivered Image Type - Determines the image type used for deliveries. The value supported is PNG
	Flash CLSID - Adjusts the CLSID generated in the HTML page for flash images
	Flash CodeBase - Adjusts the codebase generated in the HTML page for flash images
	Flash Plugins Page - Used with EMBED tags for Flash images
	FontMap File

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	JavaHost Service String - Points to the box that is running the Javahost
	Max Completion Time In Sec
	Max In Memory Chart - Maximum size of charts that are kept in memory. All others are saved to disk
	Max Processing Threads
	Max Queued Charts
	SVG Plugins Page - Entry used to write out HTML tag for SVG images
	Max Concurrent - Maximum concurrently executing funnel chart requests
	Max Canvas Height - The maximum height of gauge canvas
	Max Canvas Width - The maximum width of gauge canvas
	Max Gauges Per Canvas - The maximum number of gauges for each canvas or how many rows to process for gauges
	■ BI Presentation Server Report Cache Configurations
	■ BI Presentation Server State Pool Configurations:
	Cross User Visibility
	Disk Check Usage Interval Minutes
	Disk Check Usage Interval Seconds
	Disk Cleanup Interval Minutes
	Disk Expire Minutes
	Disk Expire Reduction Ratio
	Disk Maximum Usage KB
	Disk Minimum Free KB
	Disk Resave Minutes
	Disk Sub Directories
	File Extension
	Memory Buckets
	Memory Cleanup Interval Minutes
	Memory Expire Minutes
	Memory Maximum Entries
	Memory Minimum Bucket Size
	Verify Reloaded Entry Key
	■ BI Presentation Server XML Cache Defaults
	Cache Directory
	CrossUser Visibility
	Disk Check Usage Interval Minutes
	Disk Check Usage Interval Seconds
	Disk Cleanup Interval Minutes
	Disk Expire Minutes
	Disk Expire Reduction Ratio
	Disk Maximum Usage KB
	Disk Minimum Free KB
	Disk Resave Minutes
	Disk Sub Directories

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	File Extension
	Memory Buckets
	Memory Cleanup Interval Minutes
	Memory Expire Minutes
	Memory Maximum Entries
	Memory Minimum Bucket Size
	Verify Reloaded EntryKey
	■ BI Presentation Server Thread Pool Configurations:
	Idle Thread Timeout Secs - The duration before an idle thread is reaped
	Max Queue Size - Maximum number of jobs allowed in the queue
	Max Threads - Maximum number of threads
	Min Threads - Minimum number of threads
	Worker Thread Size Kb - Number of threads in a stack in kilobytes
	■ BI Presentation Server Other Configurations
	Admin URL - The URL for the Actuate Admin portal where an administrator can manage Advanced Reporting users permissions jobs files and folders
	AuthId Expiry - The expiration period in minutes of the authentication ID that comes from Actuate
	Connect String Parameter - The parameter in every report that accepts the address for a connection to the Analytics Server
	JavaHost Service String - Points to the box that is running the Javahost
	Server Analytics ODBCDSN - The DSN set up on the Actuate iServer host to be used for authentication
	Server URL - Points to the Actuate iServer
	Volume - The volume containing the Actuate reports and documents
	Web URL - The URL for the Actuate JSP front-end
	Max Follow Links
	Cache Cleanup Secs
	Cache Timeout Secs
	Hash UserHome Directories - How many characters to use to hash usernames into sub directories
	Catalog AutoSave Minutes
	Catalog AutoSave TimeSpanDays
	Catalog Max Autosaves
	Catalog Path - Contains the location of the file where the Web Catalog is stored. This entry must exist and must be valid. The Oracle BI Presentation Server will not start if the entry is invalid or missing
	Disconnected Dir - The location on disk of the Disconnected Applications directory
	Archive Ibots
	Connection Point Buffer Size
	Disable Send Delay
	Idle Cleanup Frequency Secs
	Idle Timeout Secs
	Keep Alive Frequency Secs

Table 1–3 (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	Keep Alive Max Failures
	Max Age Secs
	Max Connections
	Max Retry Attempts
	Server Connect String
	Class Main
	Jni Library - Absolute path to jvm.dll
	JVM Options - Java command line parameters. Default: -Xms128m -Xmx256m -Xrs -Djava.class.path:{CLASSPATH} -Djava.awt.headless:true -Djava.util.logging.config.file: {SADATADIR}//web//config//logconfig.txt where {CLASSPATH} is the list of javahost jar files separated by semicolons
	Log Config File
	Admin Dump Type
	Completely Disable - TRUE prevents Oracle BI Presentation Server from producing any dump or core files. Other MiniDump configuration settings are irrelevant if this value is TRUE
	Default Dump Type - Default type of dump to perform. Possible values: disabled Do not capture a dump. normal Capture only enough information to produce stack traces. Same as MiniDumpNormal. For more information, search the MSDN Web site for MiniDump options
	Dump Directory - Directory in which to place dumps
	Max Dumps - The maximum number of dumps to place in the DumpDirectory before overwriting old dumps
	Preload Dbg help - Selecting TRUE loads Microsoft dbghelp.dll library at startup instead of waiting for a crash to occur. This provides for more reliable dumping
	SETranslator Dump Type - The type of dump to perform when hardware exception translator is invoked
	Unhandled Exception DumpType - The type of dump to perform when the server crashes
	Listener
	Max Listen Backlog

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
Oracle BI Scheduler	■ Product Version ■ Oracle BI Scheduler Configuration: Admin Name Bulk Fetch Buffer Size CLI Type Cluster Port DSN Default Script Path Log All Sql Stmts - True or False Max Exec Threads Min Exec Threads Num of DB Connections Part Of Cluster Pause On Startup Pool Timeout Pool Username Port String Purge Inst Days Purge Interval Minutes Scheduler Script Path Target Type Temp Path Table Error Messages Table Instances Table Jobs Table Params Java Host Server CA Certificate Dir CA Certificate File Cert PrivateKey FileName Certificate FileName Certificate Verify Depth Cipher List Passphrase FileName Passphrase ProgramName Trusted Peer DNS Use SSL Verify Peer Script RPC Port Auth User Server Service

Table 1–3   (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
	System
	■ Oracle BI Scheduler Mail Configuration
	From
	Max Recipients
	SMTP Port
	SMTP Server
	Sender
	Smtp CA Certificate Directory
	Smtp CA Certificate File
	Smtp CA Certificate Verification Depth
	Smtp Cipher List
	Try
	Use Bcc
	Use SSL
	Username
	■ Oracle BI Scheduler iBOTS Configuration:
	Debug
	Keep Error LogFiles
	Log Purge Days
	Log_Dir
	Max Delivery SleepSecs
	Max Global SleepSecs
	Max Request SleepSecs
	MaxRows Times Columns
	Min Delivery Sleep Secs
	Min Global Sleep Secs
	Min Request Sleep Secs
	Num Of Delivery Retries
	Num Of Global Retries
	Num Of Request Retries
	Web Server
Oracle BI Cluster Controller	■ Product Version·
	■ Oracle BI Cluster Controller Configurations (including PRIMARY_CONTROLLER, SECONDARY_CONTROLLER, SERVERS)

Table 1–3 (Cont.) Collected Configuration for Oracle BI Targets

Target Type	Collected Configuration Information
Oracle BI DAC Server	■ Product Version ■ Oracle BI DAC Server Properties Type Connect String Host Port Database User Name JDBC Driver JDBC URL EMail Host EMail Protocol EMail User EMail Address DAC Prop Server Host DAC Prop Server Port DAC Prop Repo Stamp Val

1.3.2 Viewing Configurations

Using the Business Intelligence Management Pack, you can perform the following actions for monitored Oracle BI targets such as Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, Oracle BI Cluster Controller, and Oracle BI DAC Server:

- View the last collected and saved configuration

- Save configurations to a configuration file (XML file) or to the Management Repository

- Search collected configuration data

- View the history of configuration changes

- Compare configurations (see Comparing Configurations for more details)

Perform the following steps to view configuration of a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on one of the Oracle BI targets. For instance, to view the configuration for Oracle BI Scheduler, click on the target type **Oracle BI Scheduler**.

4. Click the **View Configuration** link in the **Configuration** section.

5. To save a "snapshot" of the current configuration, click **Save**.

6. You can select Save to Enterprise Manager Repository or Export to File. Click **OK** to continue.

1.3.3 Comparing Configurations

Grid Control gives you the tools to perform comparisons between configurations of the same target type. These comparisons are useful to quickly find similarities and differences between two or more configurations.

You can compare:

- Two configurations in the Management Repository
- Two saved configuration files
- One configuration to multiple configurations
- A configuration in the Management Repository to a saved configuration file

When two target configurations are compared, all categories of collected configuration information are included. Grid Control presents the summary results of the comparison in a tabular format. More information that is detailed is available by drilling down from those summary results.

Perform the following steps to compare configurations of a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on one of the Oracle BI targets. For instance, to compare configurations for Oracle BI Scheduler, click on the target type **Oracle BI Scheduler**.

4. Click the **Compare Configuration** link in the **Configuration** section.

5. You may select another target (in this case, another Oracle BI Scheduler) for comparison or click **Saved Configurations** to launch a comparison between the current configuration and an already saved configuration snapshot.

6. To compare the current configuration to multiple snapshots, click **Compare Multiple Configurations** link in the **Configuration** section of the Oracle BI target home page.

1.3.4 Configuration History

Grid Control gives you the tools to view the history of configuration changes for all monitored Oracle BI targets.

Perform the following steps to view configuration history of a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on one of the Oracle BI targets. For instance, to view configuration history for Oracle BI Scheduler, click on the target type **Oracle BI Scheduler**.

4. Click the **Configuration History** link in the **Configuration** section.

5. From the **View History Records** dropdown menu, select **Show All** to view the configuration changes that occurred in Oracle BI Scheduler

6. Click the **Details** link to view more information about a specific change

7. The configuration changes can also be saved to a CSV file by clicking the **Save to File** button.

The change history audit trail is useful not only for diagnostic purposes, but also for compliance, as laws such as SOX and HIPAA require traceability of changes at all levels of the application stack. As changes are tracked automatically, it makes compliance a lot easier, quicker and less expensive to implement.

1.4 Application Performance Management

Due to the size, complexity, and criticality of today's enterprise IT operations, the challenge for IT professionals is to maintain high levels of component availability and performance for both applications and all components that comprise the application's technology stack. Monitoring the performance of these components and quickly correcting problems before they can impact business operations is crucial.

For more information about Application Performance Management, refer to the System Monitoring section of the *Enterprise Manager Concepts Guide*:

http://download.oracle.com/docs/cd/B16240_
01/doc/em.102/b31949/toc.htm

The Business Intelligence Management Pack in Enterprise Manager provides comprehensive, flexible, easy-to-use monitoring functionality that supports the timely detection and notification of impending IT problems across your Business Intelligence environment.

This chapter covers the following topics:

- Monitoring Basics
- Monitoring Templates
- User-Defined Metrics
- Real-Time Performance Charts

1.4.1 Monitoring Basics

System monitoring functionality permits unattended monitoring of your IT environment. The Business Intelligence Management Pack in Enterprise Manager comes with a comprehensive set of performance and health metrics that allow monitoring of key components in your BI environment, such as Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, Oracle BI Cluster Controller, Oracle BI DAC Server, as well as the underlying hosts on which they run.

The collected performance metrics for the monitored Oracle BI targets are described in the Oracle Business Intelligence Performance Metrics section.

For information about collected performance metrics for the underlying hosts refer to the Host section of the *Enterprise Manager Framework, Host, and Services Metric Reference Manual*:

(http://download.oracle.com/docs/cd/B16240_
01/doc/em.102/b16230/toc.htm).

The Management Agent on each monitored host monitors the status, health, and performance of all managed components (also referred to as targets) on that host. If a target goes down, or if a performance metric crosses a warning or critical threshold, an alert is generated and sent to Enterprise Manager and to Enterprise Manager administrators who have registered interest in receiving such notifications.

Systems monitoring functionality and the mechanisms that support this functionality are discussed in the following sections:

- Out-of-Box Monitoring
- Metric Baselines
- Alerts
- Notifications

- [Corrective Actions](#)

- [Blackouts](#)

1.4.1.1 Out-of-Box Monitoring

Management Agents of Enterprise Manager automatically start monitoring their host systems (including hardware and software configuration data on these hosts) as soon as they are deployed and started. Metrics from all monitored components are stored and aggregated in the Management Repository, providing administrators with a rich source of diagnostic information and trend analysis data. When critical alerts are detected, notifications are sent to administrators for rapid resolution.

Out-of-box, Enterprise Manager monitoring functionality provides:

- In-depth monitoring with Oracle-recommended metrics and thresholds.

- Access to real-time performance charts.

- Collection, storage, and aggregation of metric data in the Management Repository. This allows you to perform strategic tasks such as trend analysis and reporting.

- E-mail notification for detected critical alerts.

The Business Intelligence Management Pack in Enterprise Manager monitors all critical components in your BI environment (such as BI Server, BI Scheduler, BI Presentation Server, BI Cluster Controller, BI DAC Server, and underlying hosts) within your IT infrastructure.

Some examples of monitored metrics are:

- Average Query Request Response Time (Oracle BI Server)

- Completed Requests/Second (Oracle BI Presentation Server)

- Failed Jobs (Oracle BI Scheduler)

- Failed ETL Runs (Oracle BI DAC Server)

- Network Interface Total I/O Rate (Host)

Perform the following steps to view all metrics collected for a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click one of the Oracle BI targets. For instance, to view the collected metrics for Oracle BI Analytics Server, click the target type **Oracle BI Analytics Server**.

4. Click the **All Metrics** link in the **Related Links** section.

Some metrics have associated predefined limiting parameters called thresholds that cause alerts to be triggered when collected metric values exceed these limits. Enterprise Manager allows you to set metric threshold values for two levels of alert severity:

- **Warning** - Attention is required in a particular area, but the area is still functional.

- **Critical** - Immediate action is required in a particular area. The area is either not functional or indicative of imminent problems.

Perform the following steps to change the warning and critical thresholds of performance metrics for a monitored Oracle BI target:

- Click the **Targets** tab on the Enterprise Manager Console.

- Click the **All Targets** tab.

- Click one of the Oracle BI targets. For instance, to change performance metrics thresholds for Oracle BI Analytics Server, click the target type **Oracle BI Analytics Server**.

- Click the **Metric and Policy Settings** link in the **Related Links** section.

In addition to monitoring performance metrics for each individual BI target, the Business Intelligence Management Pack provides the ability to monitor the BI environment from a service-oriented perspective. A target of type "Generic Service" is created automatically after the Oracle BI Suite EE discovery wizard is completed. The service is modeled with Oracle BI Analytics Server, Oracle BI Scheduler, Oracle BI Presentation Server, Oracle BI Cluster Controller, and the underlying hosts defined as the key components critical for running this service.

For more information about monitoring the BI environment from a service-oriented perspective see Service Level Management section.

You can define metrics to measure the performance of the service. You can add performance metrics from any of the key components that are critical for running the service. After you add metrics, you can define thresholds, which, when exceeded, generate alerts.

Perform the following steps to add performance metrics based on any of the key components and change the warning and critical thresholds for the selected metrics:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Performance Metrics** link.

6. Select **Based on System** from the **Add** dropdown list and click **Go**.

7. Select the Oracle BI target to monitor from the **Target Type** dropdown list, and then select the desired performance metric from the **Metric** dropdown list. Click **Continue** to proceed.

8. Define the **Warning Threshold** and **Critical Threshold** for the selected performance metric and click **OK** to save your changes.

1.4.1.2 Metric Baselines

Metric baselines are statistical characterizations of system performance over well-defined time periods. Metric baselines can be used to implement adaptive alert thresholds for certain performance metrics as well as provide normalized views of system performance. Adaptive alert thresholds are used to detect unusual performance events. Baseline normalized views of metric behavior help administrators explain and understand such events. Metric baselines are well-defined time intervals (baseline periods) over which Enterprise Manager has captured system performance metrics. The underlying assumption of metric baselines is that systems with relatively stable performance should exhibit similar metric observations (that is, values) over times of comparable workload.

Two types of baseline periods are supported: moving window baseline periods and static baseline periods. Moving window baseline periods are defined as some number of days before the current date (for example: Last 7 days). This allows comparison of current metric values with recently observed history. Moving window baselines are

useful for operational systems with predictable workload cycles (for example: OLTP days and batch nights). Static baselines are periods of time that you define that are of particular interest to you (for example: end of the fiscal year). These baselines can be used to characterize workload periods for comparison against future occurrences of that workload (for example: compare end of the fiscal year from one calendar year to the next).

Once metric baselines are defined, they can be used to establish alert thresholds that are statistically significant and adapt to expected variations across time. For example, you can define alert thresholds to be generated based on significance level, such as, the HIGH significance level thresholds are values that occur 5 in 100 times. Alternatively, you can generate thresholds based on a percentage of the maximum value observed within the baseline period. These can be used to generate alerts when performance metric values are observed to exceed normal peaks within that period.

> **Note:** Metric baselines are supported only for the Oracle BI Service type Generic Service. Other Oracle BI targets do not support metric baselines.

Perform the following steps to customize metric baselines for the Oracle BI Service of type **Generic Service**:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Metric Baselines** link in the **Related Links** section.

1.4.1.3 Alerts

When a metric threshold value is reached, an alert is generated. An alert indicates a potential problem; either a warning or critical threshold for a monitored metric has been crossed. An alert can also be generated for various target availability states, such as:

- Target is down.

- Oracle Management Agent monitoring the target is unreachable.

For information about defining warning and critical thresholds, see the Out-of-Box Monitoring section.

When an alert is generated, you can access details about the alert from the Enterprise Manager console. In the **All Targets Alerts** section of the Enterprise Manager home page, you can view **Critical Alerts**, **Warning Alerts** and **Errors** for all monitored targets.

The home page of any monitored Oracle BI target lists the alerts specific to that target. You may also view a history of alerts for diagnostics purposes.

Perform the following steps to view alert history for a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click one of the Oracle BI targets. For instance, to view alert history for Oracle BI Analytics Server, click the target type **Oracle BI Analytics Server**.

4. Click the **Alert History** link in the Related Links section.

Enterprise Manager provides various options to respond to alerts. Administrators can be automatically notified when an alert triggers and/or corrective actions can be set up to automatically resolve an alert condition.

For information about setting up notifications, see Notifications section.

For information about setting up corrective actions, see Corrective Actions section.

1.4.1.4 Notifications

When a target becomes unavailable or if thresholds for performance are crossed, alerts are generated in the Enterprise Manager console and notifications are sent to the appropriate administrators. Enterprise Manager supports notifications via e-mail (including e-mail-to-page systems), SNMP traps, and/or by running custom scripts.

Enterprise Manager supports these various notification mechanisms via notification methods. A notification method is used to specify the particulars associated with a specific notification mechanism, for example, which SMTP gateway(s) to use for e-mail, which OS script to run to log trouble-tickets, and so on. Super Administrators perform a one-time setup of the various types of notification methods available for use. Once defined, other administrators can create notification rules that specify the set of criteria that determines when a notification should be sent and how it should be sent. The criteria defined in notification rules include the targets, metrics and severity states (clear, warning, or critical) and the notification method that should be used when an alert occurs that matches the criteria. For example, you can define a notification rule that specifies e-mail should be sent to you when CPU Utilization on any host target is at critical severity or another notification rule that creates a trouble-ticket when any database is down. After a notification rule is defined, it can be made public for sharing across administrators. For example, administrators can subscribe to the same rule if they are interested in receiving alerts for the same criteria defined in the rule. Alternatively, an Enterprise Manager Super Administrator can assign notification rules to other administrators such that they receive notifications for alerts as defined in the rule.

Notifications are not limited to alerting administrators. Notification methods can be extended to execute any custom OS script or PL/SQL procedure, and thus can be used to automate any type of alert handling. For example, administrators can define notification methods that call into a trouble ticketing system, invoke third-party APIs to share alert information with other monitoring systems, or log a bug against a product.

Perform the following steps to customize notifications:

1. Click the **Setup** link on the Enterprise Manager Console (located in the upper right section).

2. Click on the **Notification Methods** tab.

3. Enter information required for the Mail Server and add the desired notification methods

1.4.1.5 Corrective Actions

Corrective actions allow you to specify automated responses to alerts. Corrective actions ensure that routine responses to alerts are automatically executed; thereby saving administrator time and ensuring problems are dealt with before they noticeably impact users. For example, if Enterprise Manager detects that a component, such as the Oracle BI Server is down, a corrective action can be specified to automatically run an OS command to start it back up. A corrective action is thus any task you specify

that will be executed when a metric triggers a warning or critical alert severity. By default, the corrective action runs on the target on which the alert has triggered. Administrators can also receive notifications for the success or failure of corrective actions.

Corrective actions for a target can be defined by all Enterprise Manager administrators who have been granted OPERATOR or greater privilege on the target. For any metric, you can define different corrective actions when the metric triggers at warning severity or at critical severity.

Corrective actions must run using the credentials of a specific Enterprise Manager administrator. For this reason, whenever a corrective action is created or modified, the credentials that the modified action will run with must be specified.

Perform the following steps to set up corrective actions based on performance metrics for a monitored Oracle BI target:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click one of the Oracle BI targets. For instance, if you would like to set up corrective actions based on performance metrics thresholds for Oracle BI Analytics Server, click on the target of type **Oracle BI Analytics Server**.

4. Click the **Metric and Policy Settings** link in the **Related Links** section.

5. Click the **Edit** link for the performance metric for which you want to set up corrective action.

6. Click **Add** in the **Corrective Actions** section to add corrective actions for either critical or warning thresholds.

1.4.1.6 Blackouts

Blackouts allow you to support planned outage periods to perform emergency or scheduled maintenance. When a target is put under blackout, monitoring is suspended, thus preventing unnecessary alerts from being sent when you bring down a target for scheduled maintenance operations such as database backup or hardware upgrade. Blackout periods are automatically excluded when calculating a target's overall availability.

A blackout period can be defined for individual targets, a group of targets or for all targets on a host. The blackout can be scheduled to run immediately or in the future, and to run indefinitely or stop after a specific duration. Blackouts can be created on an as-needed basis, or scheduled to run at regular intervals. If, during the maintenance period, you discover that you need more (or less) time to complete maintenance tasks, you can easily extend (or stop) the blackout that is currently in effect. Blackout functionality is available from both the Enterprise Manager console as well as via the Enterprise Manager command-line interface (EMCLI). The EMCLI is often useful for administrators who would like to incorporate the blacking out of a target within their maintenance scripts. When a blackout ends, the Management Agent automatically re-evaluates all metrics for the target to provide current status of the target post-blackout.

If an administrator inadvertently performs scheduled maintenance on a target without first putting the target under blackout, these periods would be reflected as target downtime instead of planned blackout periods. This has an adverse impact on the target's availability records. In such cases, Enterprise Manager allows Super Administrators to go back and define the blackout period that should have happened

at that time. The ability to create these retroactive blackouts provides Super Administrators the flexibility to define a more accurate picture of target availability.

Perform the following steps to set up blackouts for a monitored Oracle BI target:

1. Click the **Setup** link on the Enterprise Manager Console (located in the upper right section).

2. Click the **Blackouts** tab.

3. Click the **Create** button to launch a blackout wizard.

4. Select the desired target types and enter all the requested information

1.4.2 Monitoring Templates

Monitoring templates simplify the task of standardizing monitoring settings across your enterprise by allowing you to specify the monitoring settings once and apply them to your monitored targets. This makes it easy for you to apply specific monitoring settings to specific classes of targets throughout your enterprise. For example, you can define one monitoring template for test databases and another monitoring template for production databases.

A monitoring template defines all Enterprise Manager parameters you would normally set to monitor a target, such as:

■ Target type to which the template applies.

■ Metrics (including user-defined metrics), thresholds, metric collection schedules, and corrective actions.

When a change is made to a template, you can reapply the template across affected targets in order to propagate the new changes. You can reapply the monitoring templates as often as needed. For any target, you can preserve custom monitoring settings by specifying metric settings that can never be overwritten by a template.

Perform the following steps to set up blackouts for a monitored Oracle BI target:

1. Click the **Setup** link on the Enterprise Manager Console (located in the upper right section).

2. Click the **Monitoring Templates** tab.

3. Click **Create** to launch a monitoring template wizard.

4. Select the desired target and click **Continue**.

5. Enter the information requested (including Warning and Critical Thresholds) and click **OK** to save your settings.

1.4.3 User-Defined Metrics

User-defined metrics allow you to extend the reach of Enterprise Manager's monitoring to conditions specific to particular environments via custom scripts. Once a user-defined metric is defined, it will be monitored, aggregated in the repository, and can trigger alerts like any other metric in Enterprise Manager. The supported user-defined metrics in the Business Intelligence Management Pack are the ones created at the host-level (Operating System). Operating System (OS) User-Defined Metrics can be accessed from Host target home pages and allow you to implement custom monitoring functions via OS scripts.

Perform the following steps to set up user-define metrics for the underlying hosts supporting the Oracle BI environment:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the target type **Host** on which Oracle Business Intelligence components are running.

4. Click the **User-Define Metrics** link in the **Related Links** section.

5. Click **Create** to create a new user-define metric

6. Enter all the requested information and click **OK** to save your changes.

If you already have your own library of custom monitoring scripts, you can leverage Enterprise Manager's monitoring features by integrating these scripts with Enterprise Manager as OS user-defined metrics.

1.4.4 Real-Time Performance Charts

Real-time performance charts are available for all monitored Oracle BI targets. The performance charts displayed are based on performance metrics collected by Enterprise Manager.

The collected performance metrics for the monitored Oracle BI targets are described in the Oracle Business Intelligence Performance Metrics section.

Performance charts are discussed in the following sections:

1.4.4.1 Oracle BI Server

- Oracle BI Server
- Oracle BI Presentation Server
- Oracle BI Scheduler
- Oracle BI DAC Server
- Oracle BI Cluster Controller

The Oracle BI Analytics Server home page shows graphs for Request Processing Time (seconds) and Request Throughput (requests per second) under the **Response and Load** section.

The **Performance** page (sub-tab) for the Oracle BI Analytics Server displays performance charts that are available in different categories:

General Performance:

- CPU Usage %
- Memory Usage (KB)
- Physical DB Connections
- Execute Requests
- Fetch Requests
- Prepare Requests
- Active Logins
- Total Sessions

Cache Performance:

- Data Cache Hit Ratio %
- Data Cache Hits Vs. Misses
- Generic Cache Requests
- Generic Cache Average Hits/sec
- Generic Cache Utilization Ratio %

Database Performance:

- Queries/sec
- Rows/sec
- Failed queries/sec
- Average Query Response Time (sec)

The **Dashboard Reports** page (sub-tab) for the Oracle BI Analytics Server displays information about dashboard usage allowing the user to:

- View Dashboard Usage in Last 7 Days
- View Failed Dashboards in Last 24 Hours
- View Top Dashboards by Resource Usage in Last 7 Days
- View Top Users by Resource Usage in Last 7 Days

1.4.4.2 Oracle BI Presentation Server

The Oracle BI Presentation Server home page shows graphs for Complete Requests per Second and Current Requests under the **Response and Load** section.

The **Performance** page (sub-tab) for the Oracle BI Presentation Server displays performance charts for the following metrics:

- CPU Usage %
- Memory Usage (KB)
- Sessions
- Chart Engine
- Query Thread Pool
- Chart Thread Pool

1.4.4.3 Oracle BI Scheduler

The Oracle BI Scheduler home page shows graphs for Failed Jobs and Total Jobs under the **Scheduler Jobs** section.

Under the **Failed BI Scheduler Jobs (Last 24 Hrs)** section, information about failed jobs is displayed with details about the Job Name, Instance ID, Job ID, Start Time, Duration and Error Message.

Under the **Next Scheduled Jobs** section, information about scheduled jobs is displayed with details about User ID, Job Name, Job ID, Next Run Time, and Script Type.

1.4.4.4 Oracle BI DAC Server

The Oracle BI DAC Server home page shows graphs for Failed Tasks and Total Tasks under the **ETL Performance** section.

The Oracle BI DAC Server home page also shows graphs for Running Tasks and Runnable Tasks under the **Running Vs Runnable** section.

Under the **Failed ETL Runs** section, information about failed ETL Runs is displayed with details about the ETL Run Name, Process ID, Duration, Total Steps, Completed Steps, Stopped/Failed Steps, Running Steps, and Log.

The **Performance** page (sub-tab) for the Oracle BI DAC Server displays performance charts that are available in two categories:

Historical ETL Performance:

- Total Tasks
- Completed Tasks
- Running Tasks
- Failed Tasks
- Queued Tasks
- Runnable Tasks

ETL Runs:

- View summary of completed runs with information about the Duration, Total Steps, Completed Steps, Stopped/Failed Steps and Running Steps for all completed runs.
- View error log for each ETL Run.

1.4.4.5 Oracle BI Cluster Controller

The Oracle BI Cluster Controller home page shows graphs for CPU (%) and Memory Usage (KB).

1.5 Service Level Management

In addition to monitoring performance metrics for each individual BI target, the Business Intelligence Management Pack provides the ability to monitor the BI environment from a service-oriented perspective. A target of type "Generic Service" is created automatically after completing the Oracle BI Suite EE discovery wizard. The service is modeled with Oracle BI Analytics Server, Oracle BI Scheduler, Oracle BI Presentation Server, Oracle BI Cluster Controller, and the underlying hosts defined as the key components critical for running this service.

For more information about Service Level Management, refer to the Service Management section of the *Enterprise Manager Concepts Guide*:

http://download.oracle.com/docs/cd/B16240_
01/doc/em.102/b31949/toc.htm

Enterprise Manager Grid Control provides a comprehensive monitoring solution that helps you to effectively manage services from the overview level to the individual component level. When a service fails or performs poorly, Grid Control provides diagnostics tools that help to resolve problems quickly and efficiently, significantly reducing administrative costs spent on problem identification and resolution. Finally,

customized reports offer a valuable mechanism to analyze the behavior of the applications over time.

Service Level Management is discussed in the following sections:

- Service Tests and Beacons
- Performance and Usage
- Availability
- Service-Level Rules
- Topology View
- Service Performance
- Reports

1.5.1 Service Tests and Beacons

Service tests are functional tests that are defined by Enterprise Manager administrators to represent end user tasks, and are used to determine the availability and performance of a service. The availability of a service is defined in terms of the successful execution of either all or at least one of the 'key' service tests defined for the service.

For the Oracle Business Intelligence Enterprise Edition application, an administrator can define a combination of one or more navigation paths within the application to be used as the criteria for determining the service's availability. For example, the Interactive Dashboards requires that a user successfully log on to the Web site and access one of the available dashboards for the service to be considered available. Enterprise Manager uses these logical tasks or 'transactions' to define the availability of a Web application. These critical paths of business processes for Web applications are recorded, and the stored transaction or 'service test' can be launched at a user-defined interval from strategic locations across the user-base.

Important Notes:

The limitations of using service tests to monitor the availability and performance of the Oracle BI-EE service are listed below:

- The following types of paths/operations can be used in the synthetic web transactions
- **Login/Logout:** Login and logout of any of the web-based BI-EE components is supported.
- **Text-based Dashboard Pages (Without the Flash Based Charts)**: Retrieving the page-load times for text only pages with pivot tables is supported. On the other hand, flash-based UI components (for example, charts) that retrieve data asynchronously through the BI Presentation Server are not supported.
- **Clickable Links**: These include tabs from the main dashboard and clickable images.
- The following types of paths/operations cannot be used in the synthetic web transactions

1. **HTML-Based Menus**: The use of dropdown lists, checkboxes, or any other dynamic HTML element is not supported.
2. **Frames**: Embedded frames (for example, Oracle BI Answers) are not supported.

- Changes made to the dashboard (for example, rearranging certain tabs, relocating certain components, and so on) may affect your service test. Verify that your service test has not been affected by these changes. In case a service is affected by these changes, you must re-record the web transaction.

- The Browser Simulation playback mode is supported on Windows XP beacons only - Browser Simulation is not supported on Windows 2000/2003 beacons. For information about setting up Windows XP beacons to support Browser Simulation, see the Browser Simulation on Windows XP Beacon is Disabled section.

Availability using service tests are monitored from various global user communities within the network. A service may be unavailable for all users or it may be a problem that is impacting users contained only within a specific network or location. To determine application availability from different end-points, 'beacons' are used to play back service tests at specified intervals from various locations that are representative of your user communities. Beacons are client robots that collect availability and performance data at specified intervals at strategic locations in the network.

Perform the following steps to add a beacon:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the target type **Agent** on which you want to create a beacon

4. From the **Add** dropdown list, select **Beacon** and click **Go**.

Perform the following steps to record a web transaction with critical paths as a service test:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Service Tests and Beacons** link.

6. From the **Service Tests** section, select **Web Transaction** from the **Test Type** dropdown list and click **Add**.

7. Click **Go** to Record a Transaction

8. Click **Record** and navigate through the critical paths in your Web browser. Close the Web browser and click **Continue** when you finish.

9. Verify the recorded steps and click **Continue**.

10. Select either **Browser Simulation** or **Request Simulation** as the **Playback Mode**. Refer to Request Simulation versus Browser Simulation for more information about the differences between the two playback modes.

11. Verify the information and click **OK** to save your service test.

12. From the **Beacons** section, click **Add**.

13. Select the desired beacon and click **Select**.

14. To enable your newly created service test, select your service test from the **Service Tests** section and click **Enable**.

1.5.1.1 Request Simulation versus Browser Simulation

The **Request Simulation** mode in Grid Control 10.2.0.4 is equivalent to the web transaction monitoring capability in Grid Control 10.2.0.3.

In Grid Control 10.2.0.3, when a web transaction is recorded, the web transaction monitoring capability records all the HTTP requests that the browser made. The Beacon plays back a web transaction by sending an equivalent set of HTTP requests. Due to the dynamic nature of HTTP requests (especially session specific parameters), the request simulation approach may not be suitable for certain web transactions because requests that contain parameters only relevant to the recording session may not be recorded.

In Grid Control 10.2.0.4, a new mode of playback: Browser Simulation was introduced. When a web transaction is recorded, all the HTTP requests, as well as the mouse and keyboard actions are recorded. A Beacon plays back a web transaction by either sending HTTP requests (Request Simulation) or by opening a browser and performing these mouse and keyboard actions (Browser Simulation). For example, data entry in a text field, and mouse click on a button.

At the end of the web transaction recording, a user needs to pick a playback mode - (Request Simulation or Browser Simulation) based on a simple heuristic.

Steps to verify the Request Simulation mode is suitable after recording:

1. Select the radio button **Request Simulation**.

2. Click **Play** next to the selection.

3. Observe the playback flow. Pay attention to any abnormal pages.

4. Click **Verify Service Test**, this may take a while depending on the complexity of the test.

5. Make sure the beacon reports the status as Up.

6. Click **Continue** to go back to the web transaction creation screen.

Steps to verify the Browser Simulation mode is suitable after recording:

1. Make sure you have Grid Control 10.2.0.4 Agent running on Windows XP Platform for the selected beacon. The Browser Simulation playback mode is supported only on Windows XP beacons - Browser Simulation is not supported on Windows 2000/2003 beacons. For information about setting up Windows XP beacons to support Browser Simulation, see the Troubleshooting the Business Intelligence Management Pack section.

2. Select the radio button **Browser Simulation**.

3. Click **Play** next to the selection.

4. Observe the playback flow. Again, pay attention to any abnormal pages.

5. If the play seems to work successfully, save the web transaction.

1.5.2 Performance and Usage

You can define metrics to measure the performance and usage of the service. Performance indicates the response time of the service as experienced by the end user. Usage metrics are based on the user demand or load on the system. After adding metrics, you can define thresholds, which, when exceeded, generate alerts.

Additionally, the charts for the performance and usage metrics that you define will be displayed in the **Charts** page (sub-tab).

Finally, the performance metrics that you add will be available for defining the Availability of the service as discussed in the following section.

Perform the following steps to add performance metrics:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Performance Metrics** link.

6. You may select Based on System or Based on Service Test from the **Add** dropdown list. Click **Go**.

7. Define the **Warning Threshold** and **Critical Threshold** for the selected performance metric and click **OK** to save your changes.

Perform the following steps to add usage metrics:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Usage Metrics** link.

6. Click **Add** and select the desired usage metrics.

7. Define the **Warning Threshold** and **Critical Threshold** for the selected performance metric and click **OK** to save your changes.

1.5.3 Availability

"Availability" of a service is a measure of the end users' ability to access the service at a given point in time. The rules of what constitutes availability, however, may differ from one application to another. For example, for a Customer Relationship Management (CRM) application, availability may mean that a user can successfully log on to the application and access a sales report. For an online store, availability may be monitored based on whether the user can successfully log in, browse the store, and make an online purchase.

Grid Control allows you to define the availability of your service based on service tests or systems.

- **Service Test-Based Availability**: Choose this option if the availability of your service is determined by the availability of a critical functionality to your end users. While defining a service test, choose the protocol that most closely matches the critical functionality of your business process and beacon locations that match the locations of your user communities. You can define one or more service tests using standard protocols and designate one or more service tests as "Key Tests." These key tests can be executed by one or more "Key Beacons" in different user communities. A service is considered available if one or all key tests can be executed successfully by at least one beacon, depending on your availability definition.

- **System-Based Availability**: The availability of your service can alternatively be based on the underlying system that hosts the service. Select the components that are critical to running your service and designate one or more components as "Key

Components," which are used to determine the availability of the service. The service is considered available if at least one or all key components are up and running, depending on your availability definition.

Perform the following steps to define the availability of a service:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click on the Oracle BI Service target type **Generic Service**.

4. Click on **Monitoring Configuration** tab.

5. Click on the **Availability Definition** link.

6. You may select Service Test or System from the **Define Availability Based On** dropdown list.

7. Enter the request information and click **OK** to save your changes.

1.5.4 Service-Level Rules

Service-level parameters are used to measure the quality of the service. These parameters are usually based on actual service-level agreements or on operational objectives.

Service Level Management feature of Grid Control allows you to proactively monitor your enterprise against your service-level agreements to verify that you are meeting the availability, performance, and business needs within the business hours of the service. For service-level agreements, you may want to specify the levels according to operational or contractual objectives.

By monitoring against service levels, you can ensure the quality and compliance of your business processes and applications.

Perform the following steps to edit service-level rule for a service:

1. Click the **Targets** tab on the Enterprise Manager Console.

2. Click the **All Targets** tab.

3. Click the Oracle BI Service target type **Generic Service**.

4. Click the **Monitoring Configuration** tab.

5. Click the **Edit Service Level Rule** link from the **Related Links** section.

6. Enter the request information and click **OK** to save your changes.

1.5.5 Topology View

Use the **Topology** page (sub-tab), to view the dependencies between the service, its system components, and other services that define its availability. Upon service failure, the potential causes of failure, as identified by Root Cause Analysis, are highlighted in the topology view. In the topology, you can view dependent relationships between services and systems.

1.5.6 Service Performance

Grid Control provides a graphical representation of the historic and current performance and usage trends in the **Charts** page (sub-tab). You can view metric data for the current day (24 hours), 7 days, or 31 days. The thresholds for any performance or usage alerts generated during the selected period are also displayed in the charts.

This helps you to easily track the performance and usage of the service test or system over time and investigate causes of service failure.

Use the **Test Performance** page (sub-tab) to view the historical and current performance of the service tests from each of the beacons. If a service test has been defined for this service, the response time measurements as a result of executing that service test can be used as a basis for performance metrics of the service. It is possible to have multiple response time measurements if the service access involves multiple steps or the service provides multiple business functions. Alternatively, performance metrics from the underlying system components can also be used to measure performance of a service.

If the performance of a service is slow, it may be due to high usage of the service. Monitoring the service usage helps diagnose poor performance by indicating whether the service is affected by high usage of a system component.

1.5.7 Reports

Enterprise Manager provides out-of-box reports that are useful for monitoring services and Web applications. You can also set the publishing options for reports so that they are sent out via email at a specified period of time.

For more information about Service Level Management, refer to the Information Publisher section of the *Enterprise Manager Concepts Guide*:

http://download.oracle.com/docs/cd/B16240_
01/doc/em.102/b31949/toc.htm

1.6 Oracle Business Intelligence Performance Metrics

Performance metrics are collected for all the monitored Oracle Business Intelligence targets. This section describes all the performance metrics collected and provides some guidelines for using performance metrics.

- Oracle BI Analytics Server
- Oracle BI Presentation Server
- Oracle BI Scheduler
- Oracle BI Cluster Controller
- Oracle BI DAC Server

1.6.1 Oracle BI Analytics Server

The metrics collected for the Oracle BI Analytics Server are shown in Table 1–4. The performance metrics for the Oracle BI Server are exposed via the JMX Agent - located in **OracleBI\systemsmanagement** directory.

Table 1–4   Oracle BI Analytics Server Metrics

Metric	Description
Database Connection Pool - Counters specifically pertaining to Oracle BI Server DB Connection Pool object	
Current Busy Connection Count	The current number of connections assigned to process a query or processing a query in the DB Connection pool.
Current Connection Count	The current number of open connections in the thread pool.
Physical Database - Back-end physical database to which Oracle BI Server connects	

Table 1–4   (Cont.) Oracle BI Analytics Server Metrics

Metric	Description
Average Query Request Response Time	Average time (in seconds) a physical query waits for responses to its back-end database requests during the sampling interval.
Failed Queries/Second	Number of queries that failed each second in the back-end physical database during the sampling interval.
Queries/Second	Number of queries completed each second by back-end physical database during the sampling interval.
Rows/Second	Number of rows retrieved each second from back-end physical database (both completed and failed queries) during the sampling interval.
Resources	
CPU (%)	The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Oracle BI Server process and any of its child processes (and their child processes and so on).
Memory (KB)	The amount of memory (in KB) used by the Oracle BI Server and its child processes.
Response	
Status	The status of the Oracle BI Server: Up, Down, Pending, or Under Blackout. This metric value is 1 if the Oracle BI Server is up and running.
Data Cache - Counters specifically pertaining to Oracle BI Server Data Cache	
Data Cache Hit Ratio as %	Percentage of data cache hits during the sampling period
Data Cache Hits/Second	Number of times a query was satisfied from data cache each second during the sampling period
Data Cache Misses/Second	Number of times a qualified query was not satisfied from data cache each second during the sampling period
Data Cache Unqualified Queries Misses/Second	Number of times an unqualified query was not satisfied from data cache each second during the sampling period
Generic Cache - Counters specifically pertaining to Oracle BI Server Cache using Generic Cache object	
Generic Cache Average Hits/Second	Average number of hits each second for the specified cache object during the sampling period
Generic Cache Average Misses/Second	Average number of misses each second for the specified cache object during the sampling period
Generic Cache Requests Since Last Collection	Total number of requests against the specified cache object since last collection
Generic Cache Total Requests	Total number of requests during the sampling period against the specified cache object
Generic Cache Utilization Ratio (%)	Percentage of specified cache object in use
General - General counters pertaining to overall Oracle BI SPDLL Performance	
Active Execute Requests	Number of execute requests active within the Oracle BI Server at the end of the sampling interval
Active Execute Requests Since Last Collection	Number of execute requests active within the Oracle BI Server since last collection
Active Fetch Requests	Number of fetch requests active within the Oracle BI Server at the end of the sampling interval
Active Fetch Requests Since Last Collection	Number of fetch requests active within the Oracle BI Server since last collection

Table 1–4   (Cont.) Oracle BI Analytics Server Metrics

Metric	Description
Active Logins	Number of active logins within the Oracle BI Server at the end of the sampling interval
Active Logins Since Last Collection	Number of active logins within the Oracle BI Server since last collection
Active Prepare Requests	Number of query prepare requests active within the Oracle BI at the end of the sampling interval
Active Prepare Requests Since Last Collection	Number of query prepare requests active within the Oracle BI since last collection
Average Query Elapsed Time	Elapsed time (in seconds) for the average query that completed, including both successful and fail queries, during the sampling interval
New Execute Requests	Number of new execute requests received by the Oracle BI Server during the sampling interval
New Execute Requests Since Last Collection	Number of new execute requests received by the Oracle BI Server since last collection
New Fetch Requests	Number of new fetch requests received by the Oracle BI Server during the sampling interval
New Fetch Requests Since Last Collection	Number of new fetch requests received by the Oracle BI Server since last collection
New Prepare Requests	Number of new query prepare requests received by the Oracle BI during the sampling interval
New Prepare Requests Since Last Collection	Number of new query prepare requests received by the Oracle BI since last collection
Queries/Second	Number of queries completed each second by Oracle BI Server during the sampling interval
Sessions Since Last Collection	Number of sessions connecting clients to Oracle BI Server since last collection
Total Sessions	Number of sessions connecting clients to Oracle BI Server at the end of the sampling interval
Dashboard Usage - Dashboard Usage in Last 7 Days	
Count	The number of dashboards accessed in the last 7 days
Last Accessed On	The "last-access" date for all the dashboards used in the last 7 days
Dashboard Usage - Failed Dashboards in Last 24 Hours	
Dashboard	The name of the failed dashboard in the last 24 hours
End Time	The end time of a dashboard request
Error Code	The error code associated with the dashboard failure
Error Message	The error message associated with the dashboard failure
Repository	The repository in which dashboard failure occurred
Start Time	The start time of a dashboard request
Subject Area	The subject area associated with the failed dashboard
Dashboard Usage - Top Dashboards in Last 7 Days	
Total Compile Time	The total compile time for a dashboard request
Total Database Time	The total database time for a dashboard request
Total Failed Requests	The total number of failed requests

Table 1–4   (Cont.) Oracle BI Analytics Server Metrics

Metric	Description
Total Requests	The total number of requests
Total Time	The total time taken to complete a request
Dashboard Usage - Top Users in Last 7 Days	
Total Compile Time	The total compile time for a dashboard request
Total Database Time	The total database time for a dashboard request
Total Failed Requests	The total number of failed requests
Total Requests	The total number of requests
Total Time	The total time taken to complete a request

1.6.2 Oracle BI Presentation Server

The metrics collected for the Oracle BI Presentation Server are shown in Table 1–5. The performance metrics for the Oracle BI Presentation Server are exposed via the JMX Agent - located in **OracleBI\systemsmanagement** directory.

Table 1–5   Oracle BI Presentation Server Metrics

Metric	Description
Resources	
CPU (%)	The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Oracle BI Presentation Server process and any of its child processes (and their child processes and so on).
Memory (KB)	The amount of memory used by the Oracle BI Presentation Server and all of its child processes in KB.
Response	
Status	The status of the Oracle BI Presentation Server: Up, Down, Pending, or Under Blackout. This metric has a value of 1 if the Oracle BI Presentation Server is up and running.
Sessions - Information about Oracle BI Presentation Server sessions. A session can be a browser or an iBot session	
Active Sessions	The number of sessions that are considered active
Current Sessions	The number of current sessions
Chart Engine - Information related to Oracle BI Presentation Server's chart engine and cache. The chart cache maintains, on disk, recently accessed charts for instantaneous response	
Charts Queued	The current number of charts waiting in queue for processing
Charts Running	The current number of charts that are currently being processed. This does not include charts waiting in queue for processing
Charts Thread Pools - Information about charts threads pools within the Oracle BI Presentation Server. A thread pool is responsible for executing jobs of a specific type	
Jobs Queued	The current number of jobs waiting in queue for processing by this thread pool
Jobs Running	The current number of jobs being processed by this thread pool
Query Thread Pool - Information about query threads pools within the Oracle BI Presentation Server. A thread pool is responsible for executing jobs of a specific type	
Jobs Queued	The current number of jobs waiting in queue for processing by this thread pool
Jobs Running	The current number of jobs being processed by this thread pool

Table 1–5   (Cont.) Oracle BI Presentation Server Metrics

Metric	Description
Request Processor - Information related to requests processed by the Oracle BI Presentation Server	
Bad Requests	The total number of bad requests
Completed Requests	The total number of requests completed
Completed Requests/Second	The rate at which new requests are processed
Current Requests	The current number of requests being processed
Failed Requests	The total number of failed requests
Long Requests	The total number of long running requests

1.6.3 Oracle BI Scheduler

The metrics collected for the Oracle BI Scheduler are shown in Table 1–6.

Table 1–6   Oracle BI Scheduler Metrics

Metric	Description
Resources	
CPU (%)	The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Oracle BI Scheduler process and any of its child processes (and their child processes and so on).
Memory (KB)	The amount of memory used by the Oracle BI Scheduler and its child processes in KB.
Response	
Status	The status of the Oracle BI Scheduler: Up, Down, Pending, or Under Blackout. This metric has a value of 1 if the Oracle BI Scheduler is up and running.
Job Metrics	
Failed Jobs	The total number of failed jobs
Total Jobs	The total number of jobs
Failed Jobs	
End Time	The end time of a scheduled job
Error Message	The error message associated with a failed job
Job Name	The name of a failed job
Start Time	The start time of a scheduled job
Total Jobs	
Job Name	The name of a scheduled job
Next Run Time	The next run time for a scheduled job
Script Type	The type of script for a scheduled job (for example, JavaScript)
Sys Time Stamp	The Sys Time Stamp for a scheduled job
Time Zone	The time zone associated with a scheduled job
User ID	The User ID responsible for a scheduled job

1.6.4 Oracle BI Cluster Controller

The metrics collected for the Oracle Cluster Controller are shown in Table 1–7.

Table 1–7   Oracle BI Cluster Controller Metrics

Metric	Description
Resources	
CPU (%)	The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Oracle BI Cluster Controller process and any of its child processes (and their child processes and so on).
Memory (KB)	The amount of memory used by the Oracle BI Cluster Controller and its child processes in KB.
Response	
Status	The status of the Oracle BI Cluster Controller: Up, Down, Pending, or Under Blackout. This metric has a value of 1 if the Oracle BI Cluster Controller is up and running.

1.6.5 Oracle BI DAC Server

The metrics collected for the Oracle BI DAC Server are shown in Table 1–8.

Table 1–8   Oracle BI DAC Server Metrics

Metric	Description
Resources	
CPU (%)	The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Oracle BI DAC Server process and any of its child processes (and their child processes and so on).
Memory (KB)	The amount of memory (in KB) used by the Oracle BI DAC Server and its child processes.
Response	
Status	The status of the Oracle BI DAC Server: Up, Down, Pending, or Under Blackout. This metric has a value of 1 if the Oracle BI DAC Server is up and running.
ETL Performance	
Completed Tasks	The number of completed ETL Tasks
Failed Tasks	The number of failed ETL Tasks
Queued Tasks	The number of queued ETL Tasks
Runnable Tasks	The number of ETL Tasks that can be run
Running Tasks	The number of running ETL Tasks
Total Tasks	The total number of ETL Tasks
ETL Runs	
Completed Steps	Number of successful steps
ETL Definition	Name of the ETL execution plan
End Time	The end time of the ETL Run
Failed Steps	Number of failed steps
Running Steps	Number of running steps
Start Time	The start time of the ETL Run

Table 1–8   (Cont.) Oracle BI DAC Server Metrics

Metric	Description
Status	Status of the ETL Run - this could be completed, failed, stopped, running, runnable, or queued
Total Steps	Total number of steps in the ETL run
Failed ETL Runs	
Completed Steps	Number of successful steps
ETL Definition	Name of the ETL execution plan
End Time	The end time of the ETL Run
Failed Steps	Number of failed steps
Running Steps	Number of running steps
Start Time	The start time of the ETL Run
Status	Status of the ETL Run - this could be completed, failed, stopped, running, runnable, or queued
Total Steps	Total number of steps in the ETL run
ETL Run Log	
ETL Log	ETL log for each of the ETL Runs

1.7 Troubleshooting the Business Intelligence Management Pack

This section describes common problems that you may encounter when monitoring and managing BI-EE with the Business Intelligence Management Pack.

It contains the following topics:

- Failure to Discover an Oracle BI Suite EE

- Configuration Comparison for the Oracle BI Presentation Server Fails

- Certain Metrics Are Not Collected

- Difference in Component Status of EM and Windows Services Panel

- Internet Explorer Crashes During Multiple Recording of Same Application Transactions

- Browser Simulation on Windows XP Beacon is Disabled

1.7.1 Failure to Discover an Oracle BI Suite EE

This section describes

1.7.1.1 Problem

The Oracle BI Suite EE discovery fails and, consequently, Enterprise Manager does not create the corresponding Oracle BI-EE targets.

1.7.1.2 Possible Cause

The credentials requested for discovering the Oracle BI-EE components (including Oracle BI Analytics Server, Oracle BI Cluster Controller, Oracle BI Scheduler and Oracle BI Presentation Server) may be inaccurate.

1.7.1.3 Solution

Provide the correct credentials for discovering the Oracle BI-EE components:

- **Agent Credentials**, enter the login credentials for a privileged account in the host, that is, an administrator account.

- **JMX Port**: 9980 - Check the C:\OracleBI\systemsmanagement\runagent.cmd file to verify that the port has been appropriately changed.

- **JMX Username/Password**: oc4jadmin/welcome1 (Default)

- **Connect String**: jdbc:oracle:oci:@<hostname>:<port>:orcl

- **Class String**: oracle.jdbc.driver.OracleDriver

- **Database Username/Password**: The username/password created to access the BI Scheduler tables and S_NQ_ACCT table for usage statistics in the Oracle database. For example, S_NQ_SCHED

Verify that all pre-requisites have been completed before the discovery process. See the Discovering and Configuring Oracle Business Intelligence Targets section.

1.7.2 Configuration Comparison for the Oracle BI Presentation Server Fails

Problem
Configuration Comparison for the Oracle BI Presentation Server Fails

Possible Cause
Limitation in Oracle Enterprise Manager 10g Release 4 (10.2.0.4.0) and will be resolved in future releases.

1.7.3 Certain Metrics Are Not Collected

Problem
Although the Oracle BI Suite EE discovery completed successfully, some metrics are collected, but other metrics are not.

Possible Cause
- JMX Agent has not been started

- JMX Agent credentials are incorrect

Solution
- Start the JMX agent - OracleBI\systemsmanagement\runagent.cmd. Make sure that all the Oracle BI-EE services are running - OC4J, Oracle BI Java Host, Oracle BI Server, Oracle BI Presentation Server, Oracle BI Scheduler, and Oracle BI Cluster Controller (if applicable).

  cd C:\OracleBI\systemsmanagement\

  runagent.cmd

- Provide accurate credentials for the JMX Agent. See the Discovering and Configuring Oracle Business Intelligence Targets section.

1.7.4 Difference in Component Status of EM and Windows Services Panel

Possible Cause

Enterprise Manager (EM) collects Oracle BI-EE metrics only at certain intervals (regular metrics every 15 minutes, availability information every five minutes). Therefore, information visible in the Enterprise Manager user interface may be out of sync with the Windows Services panel.

Workaround

If you are interested in monitoring a certain metric in real-time mode for a certain period, go to the **All Metrics** page for a given Oracle BI-EE target, navigate to the desired metric, and change it to Real-time mode. In this mode, collection occurs more frequently and you can follow statistics more closely.

Solution

You can change the collection frequency for individual metrics. If you want the availability metrics to be collected more often, you may change the collection frequency for your key Oracle BI-EE components.

1.7.5 Internet Explorer Crashes During Multiple Recording of Same Application Transactions

Possible Cause

A limitation in the application.

Solution

Close and start a new Internet Explorer browser window.

1.7.6 Browser Simulation on Windows XP Beacon is Disabled

Possible Cause

To run a Web Transaction (Browser) service test, you require beacons that are running on 10.2.0.4 or later Management Agent on Windows XP.

Solution

Refer to the Advanced Configuration Guide for details: (http://download-east.oracle.com/docs/cd/B16240_01/doc/em.102/e10954/apm.htm#sthref635)