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Enterprise

# HPE OMi Management Pack for Oracle Database

Software Version: 1.11

For Operations Manager i for Linux and Windows® operating systems

## User Guide

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# Chapter 1: OMi Management Pack for Oracle Database

The HPE OMi Management Pack for Oracle Database (OMi MP for Oracle Database) works with Operations Manager i (OMi) and enables you to monitor Oracle database environments. It includes Indicators - Health Indicators (HIs), Event Type Indicators (ETIs) and Correlation Rules that analyze the events that occur in the Oracle databases and report the health status of the Oracle databases. It also includes out-of-the-box (OOTB) Aspects for monitoring different types of Oracle database environments (single instance databases, Real Application Cluster (RAC), Automatic Storage Management (ASM), and Data Guard). The Management Templates consist of a wide range of Aspects which enable the monitoring of Oracle components and the system components.

These Management Templates can be seamlessly deployed by administrators for monitoring Oracle databases in an environment. The Subject Matter Experts (SMEs) and developers can easily customize the Oracle Management Templates.

The OMi MP for Oracle Database works with OMi and provides the following additional functionalities to support a unified monitoring solution:

- Oracle instance based deployment and configuration
- Agent and agentless monitoring of Oracle instances


# Chapter 2: Getting Started

The following section provides step-by-step instructions about monitoring Oracle databases using OMi MP for Oracle Database.

## Task 1: Adding Nodes to the BSM Console

**Note:** If the node already exists in RTSM, you can skip this step and proceed to Task 2.

Before you begin monitoring, you need to add the nodes to the BSM console.

1. Open the Monitored Nodes manager from the Operations Management Administration:  
On BSM 9.2x, click **Admin > Operations Management > Setup > Monitored Nodes**.  
On OMi 10.x, click **Administration > Setup and Maintenance > Monitored Nodes**.
2. In the Node Views pane, click **Predefined Node Filters > Monitored Nodes** and click  and then click **Computer > Windows** or **Unix**. The Create New Monitored Nodes dialog box appears.
3. Specify the Primary DNS Name, IP address, Operating System, and Processor Architecture of the node and click **OK**.

The newly created node is saved as a CI instance in RTSM.

**Note:** The node with the HP Operations Agent must be connected to OMi server and certificate must be granted.

## Task 2: User Privileges for non-privileged HP Operations Agent User

Before deploying the Oracle Discovery Aspect, you must follow these steps:

**On Windows:** No additional permission is required.

**On Linux:**


1. You must provide read, write, and execute permissions to non-privileged user for `/var/opt/OV` directory.
2. You must create `/etc/opt/OV` directory and provide read, write, and execute permissions to non-privileged user.

**Note:** Make sure that the HP Operations Agent non-root user is given read permission to the `ORACLE_HOME` directory.

## Task 3: Deploying the Oracle Discovery Aspect


To discover the Oracle CI on the added managed nodes, you must deploy the Oracle Discovery Aspect by following these steps:



1. Open the Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**
2. In the Configuration Folders pane:  
**Configuration Folders > Database Management > Oracle > Oracle Aspects**
3. In the **Oracle Aspects** folder, right-click the Oracle Discovery Aspect, and then click  **Assign and Deploy Item** to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, click the CI to which you want to deploy the Oracle Discovery Aspect and then click **Next**.
5. In the **Required Parameters** tab, click **Next**.

**Note:** Oracle Discovery Aspect do not have mandatory parameters. You will get a notification stating the following message:

There are no parameters that require editing for this Assignment.

6. (*Optional*). In the **All Parameters** tab, you can change the default values of the parameters. To change the default values of the parameters, follow these steps:
  - a. Select the **Frequency of OracleDB\_DeepDiscovery** parameter and then click . The Edit Instance Parameter window appears.
  - b. Click **Value**, specify the value, and then click **OK**.
  - c. Click **Next**.
7. (*Optional*). In the **Configure Options** tab, if you do not want to enable the assignment immediately, clear the **Enable Assigned Objects** check box. You can enable the assignment later using the Assignments & Tuning pane.
8. Click **Finish**.

**Note:** After the Oracle Discovery Aspect is deployed, a message stating the Assignment and deployment jobs created appears. To check the status of the deployment jobs, go to **Admin > Operations Management > Monitoring > Deployment Jobs**.

## Task 4: Configuring OMi MP for Oracle Database for HP Operations Agent running with non-privilege user

After deploying the Oracle Discovery Aspect, you must follow these steps:

**On Windows:** No additional permission is required.

**On Linux:**

1. Run the script as a root user under `/var/opt/0V/bin/instrumentation:`  
`dbspi_root.pl`  
The `/etc/dbspi.su` is created.
2. Edit the `dbspi.su` file as a root user by uncommenting the lines or adding new lines:  
`<user>:<commands>`

As in the following examples:

```
oracle:/opt/oracle/product/sqlplus /nolog - allows sqlplus commands
```

or

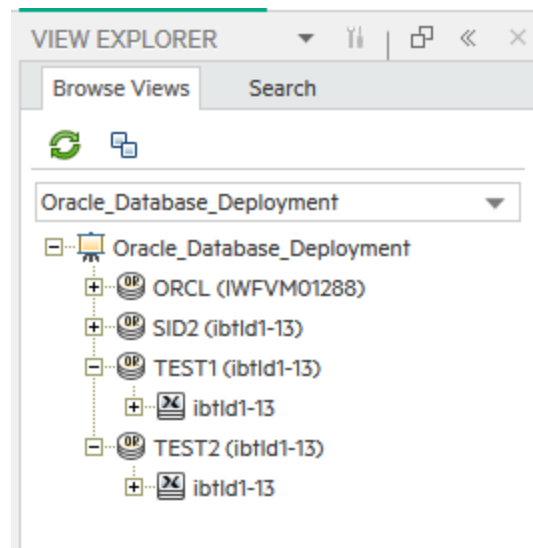
```
oracle:/opt/oracle/product/* - allows execution of all commands by an Oracle user
```

## Task 5: Verifying Discovery

After you deploy the Oracle Discovery Aspect, you must verify if the CIs are populated in the Top view.

To view the CIs populated in the Browse Views, follow these steps:

1. Open the Event Perspective pane:  
On BSM 9.2x, click **Applications > Operations Manager > Event Perspective**.  
On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. In the **Browse Views** tab, select the **Oracle\_Database\_Deployment**.



## Task 6: Deploying the Oracle Management Templates or Oracle Aspects

If you have already deployed OMi MP for Oracle Database 1.10 - Management Templates and Aspects, then skip to "[Task 8: Updating Assignments to Newer version](#)".

You can deploy Oracle Management Templates or Aspects to the Oracle CIs. For more information about deploying Oracle Management Templates, go to "[Task 6a: Identifying and Deploying an Oracle Management Template](#)". For information about deploying Oracle Aspects, go to "[Task 6b: Deploying Oracle Aspects](#)".

### Data Collection Process

The frequency (polling interval) at which each policy must be monitored is predefined with a default value in a specific frequency parameter. Frequency parameter is an expert parameter that is defined for each of the

metrics regardless of whether they are for generating events or not.

Following are the four predefined frequency parameters:

| Scheduler Frequency | Default value |
|---------------------|---------------|
| Very High           | 5 mins        |
| High                | 15 mins       |
| Medium              | 1 hour        |
| Low                 | 24 hours      |

After Management Templates and Aspects are deployed, collector is triggered based on the parameter value in a specific policy. You can modify the default value of the parameter at the following levels:

- During deployment of the Management Template or Aspects using the Management Templates & Aspects pane
- After deployment using the Assignments & Tuning pane.

For more information about how to modify the parameter values, see "[Tuning Oracle Management Templates](#)".

## Task 6a: Identifying and Deploying an Oracle Management Template

You **must** deploy the Oracle Discovery Aspect even if the CIs are already populated by other source such as SiteScope, DDM and so on. For more information, see "[Task 3: Deploying the Oracle Discovery Aspect](#)".

Before deploying the Oracle Management Templates, follow these recommendations to identify the Oracle Management Template suitable for your environment:


- If you want to monitor the basic functionalities such as Locks & Latches, memory, tablespaces, and transactions for single instance Oracle database environment, you can deploy the **Essential Oracle Management Template**.
- If you want to monitor performance of IO, query, objects, and database space utilization along with the basic functionality, you can deploy the **Extensive Oracle Management Template**.
- For agentless monitoring, you can deploy the **Hybrid Oracle Management Template**.

OMi MP for Oracle Database contains Aspects that are not part of any existing Management Templates. You can add the required Aspects to any of the existing Management Template. For more information about how to add required Aspects, see the section "[Tuning Oracle Management Templates](#)" and for list of Aspects, see the section "[Overview of Oracle Aspects](#)" on page 27. You can also create new Management Template with the combination of required Aspects, see the section "[Creating New Oracle Management Templates](#)".






To deploy the Oracle Management Template, follow these steps:


1. Open the Management Templates & Aspects pane:
  - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.
  - On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**
2. In the Configuration Folders pane:

### Configuration Folders > Database Management > Oracle > Oracle Management Templates

3. In the **Oracle Management Templates** folder, click the Management Template that you want to deploy, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, click the CI to which you want to assign the Management Template, and then click **Next**. You can select multiple items by holding down the **Ctrl** or **Shift** key while selecting them. Click **Next** to accept the CIs and go to **Required Parameters**.
5. In the **Required Parameters** tab, you must specify the mandatory parameters - Oracle Instance User Name and Oracle Instance password. To specify the **Required Parameters**, follow these steps:

**Note:** Required Parameters lists all mandatory parameters in the management template that do not have a value.

- a. Select the **Oracle Instance User Name** parameter in the list, and then click . The Oracle Instance User Name dialog box opens.
- b. Click **Value**, specify the value, and then click **OK**.
- c. Select the **Oracle Instance Password** parameter in the list, and then click . The Oracle Instance Password dialog box opens.
- d. Click **Value**, specify the value, and then click **OK**.
- e. Click **Next**.
6. In the **All ParametersParameter Summary** tab, you can change the default values of the parameters. To change the default values of the parameters, follow these steps:
  - a. Select the **Oracle Instance Name** parameter and then click . The Edit Instance Parameter window appears.
  - b. Select the parameter from the list and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
  - c. If the Oracle database is enabled with the Oracle listener service, then you must provide password for the listener service. Select the **Listener Name** parameter and click .
  - d. Double-click the **Oracle Listener Password** dependent parameter.
  - e. Enter the listener password in the **Password** field.
  - f. Enter the same password in the **Verify Password** field and click **OK**.

**Note:** In the **All ParametersParameter Summary** tab, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defines as expert parameters are not shown. To show expert parameters, click  **Hide Expert Parameters**.

- g. Click **Next**.
7. (*Optional*). In the **Configure Options** tab, if you do not want to enable the assignment immediately, perform the following
  - On BSM 9.2x, clear the **Enable Assigned Objects** check box.
  - On OMi 10.x, clear the **Enable Assignment(s)** check box.
 You can enable the assignment later using the Assignments & Tuning pane.
8. Click **Finish**.

**Note:** The username given during the deployment of a Management Template should have required privileges for OMi MP for Oracle Database to collect data. You can use the oracle user **system** or you can create a user. To create a user on the node, you can use the script **dbspiocr.sh** or **dbspiocr.bat** as mentioned in the following steps or you can create a user manually by referring the **dbspiocr.sql**. This script also contains information about the required list of privileges. The script is available at the following location only after deploying the Oracle Discovery Aspect:

**Linux:**

```
/var/opt/OV/bin/instrumentation
```

**Usage:**dbspiocr.sh -oracle\_home <OracleHomeDir> -oracle\_sid <InstanceName> -sys\_pass <SysPassword> -user <NewUserName> -user\_pass <NewUserPassword> -def\_ts <DefaultTableSpaceName> -tmp\_ts <TempTableSpaceName>

**For example:**dbspiocr.sh -oracle\_home /app/oracle/product/db\_1 -oracle\_sid orcl -sys\_pass manager -user hporamp -user\_pass hporamp -def\_ts users -tmp\_ts temp

**Windows:**

```
<ovagentdir>\bin\instrumentation
```

**Usage:**dbspiocr.bat -oracle\_home <OracleHomeDir> -oracle\_sid <InstanceName> -sys\_pass <SysPassword> -user <NewUserName> -user\_pass <NewUserPassword> -def\_ts <DefaultTableSpaceName> -tmp\_ts <TempTableSpaceName>

**Example:**dbspiocr.bat -oracle\_home C:\app\oracle\product\db\_1 -oracle\_sid orcl -sys\_pass manager -user hporamp -user\_pass hporamp -def\_ts users -tmp\_ts temp


In case of Oracle database 12.1 or later, the user name should begin with **c##** as prefix. For example, **c##hporamp**.

For more information about the permission that the username requires, see the section "[Permission and Grants](#)".

## Task 6b: Deploying Oracle Aspects

You **must** deploy the Oracle Discovery Aspect even if the CIs are already populated by other source such as SiteScope, DDM and so on. For more information, see "[Task 3: Deploying the Oracle Discovery Aspect](#)".

To deploy the Oracle Aspects, follow these steps:

1. Open the Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:  
**Configuration Folders > Database Management > Oracle > Oracle Aspects**
3. In the Management Templates & Aspects pane, click the Oracle Aspect that you want to deploy, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, click the CI to which you want to assign the Aspect, and then click **Next**.






**Note:** The required parameters are already specified while deploying the Oracle Discovery Aspect.

**Note:** In the **All ParametersParameter Summary** tab, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To show expert parameters, click

 **Hide Expert Parameters.**

5. In the **Required Parameters** tab, you must specify the mandatory parameters - Oracle Instance User Name and Oracle Instance password. To specify the **Required Parameters**, follow these steps:

**Note:** Required Parameters lists all mandatory parameters in the management template that do not have a value.

- a. Select the **Oracle Instance User Name** parameter in the list, and then click . The Oracle Instance User Name dialog box opens.
  - b. Click **Value**, specify the value, and then click **OK**.
  - c. Select the **Oracle Instance Password** parameter in the list, and then click . The Oracle Instance Password dialog box opens.
  - d. Click **Value**, specify the value, and then click **OK**.
  - e. Click **Next**.
6. In the **All ParametersParameter Summary** tab, you can change the default values of the parameters. To change the default values of the parameters, follow these steps:
    - a. Select the **Oracle Instance Name** parameter and then click . The Edit Instance Parameter window appears.
    - b. Select the parameter from the list and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
    - c. If Oracle database with Oracle listener service enabled, then you must provide password for the listener service. Select the **Listener Name** parameter and click .
    - d. Double-click the **Oracle Listener Password** dependent parameter.
    - e. Enter the listener password in the **Password** field.
    - f. Enter the same password in the **Verify Password** field and click **OK**.

**Note:** In the **All ParametersParameter Summary** tab, you can override the default values of any parameter. You can specify a value for each parameter at the Management Template level. By default, parameters defined as expert parameters are not shown. To show expert parameters, click

 **Hide Expert Parameters.**

- g. Click **Next**.
7. (*Optional*). In the **Configure Options** tab, if you do not want to enable the assignment immediately, perform the following:
    - On BSM 9.2x, clear the **Enable Assigned Objects** check box.
    - On OMi 10.x, click the **Enable Assignment(s)** check box.
 You can then enable the assignment later using the Assignments & Tuning pane.
  8. Click **Finish**.

## Task 7: Configuring Oracle Database Error Log Monitoring for non-privileged HP Operations Agent User

### On Windows:

As an Administrator, you must provide read permission for the following directories to non-privileged user:

```
<ORACLE_BASE>\oradata\<ORACLE_SID>\
```

```
<ORACLE_BASE>\diag\
```

### On Linux:

1. To identify the Oracle database alert log that needs to be monitored, run the following command as a root user:  



```
/var/opt/OV/bin/instrumentation/dbspicao -l
```
2. You must provide read permission to the non-root user for alert log monitoring.

## Task 8: Updating Assignments to Newer version


To update Management Templates or Aspects to the latest version, perform the following steps for each Management Template or Aspect assignment on each node:


**Note:** You must deploy Oracle Management Templates and Aspects to the **Oracle CI**.

On BSM 9.2x, to update perform the following steps:

1. Open the Management Template & Aspects pane:  
**Admin > Operations Management > Monitoring > Management Templates & Aspects.**
2. In the Configuration Folders pane:  
**Configuration Folders > Database Management > Oracle**
3. To deploy the latest version of Essential Oracle Management Template:  
 In the Management Templates & Aspects pane, expand the **Essential Oracle Management Template** and select **1.100** version and click  **Assign and Deploy Item**.  
 Similarly, you can select the 1.100 version of the required Management Template or Aspects and click .

On OMi 10.x, to update perform the following steps:

1. Open the Assignments & Tuning pane:  
**Administration > Monitoring > Assignments & Tuning**
2. In the Browse Views pane, select the **Oracle\_Database\_Deployment** view and select each CI where version update is required.
3. Click  **Show Assignments That Require an Update**.  
 All the Management Templates and Aspects that requires an update are listed.

4. Select each of the Management Templates and Aspects and click  **Update Assigned Item**.  
The Update Assigned Item dialog box appears.
5. In the **Update Options** tab, follow these steps:
  - a. Select the latest version from the **Update to Version** drop down list.
  - b. Select the parameter value that you require for the assignment:  
If you select **Use parameter values from existing assignments**, only the new mandatory parameters that do not have a default value are listed.  
If you select **Use default parameter values from version selected above**, all mandatory parameters from the selected Management Template or Aspect version that do not have a default value are displayed. These parameters must be edited before proceeding to the next step of the wizard.
  - c. Click **Next**.
6. In the **Required Parameter** tab, edit and provide values for each of the mandatory parameters. **Oracle Instance User Name** and **Oracle Instance Password** are the mandatory parameters.
7. In the **Parameter Summary** tab, if you have assigned the **Oracle ASM Health** aspect to the ASM environment, then you must provide value for the dependent **Oracle ASM Instance** parameter. You can view this parameter when you edit **Oracle Instance Name** parameter.
8. Click **Finish** to save the changes and close the wizard.

The assigned item is updated to the specified Management Template or Aspect version.

## Monitoring Oracle Environment

After you deploy Management Template and Aspects, you can analyze the status and health of Oracle CIs from the following perspectives:

- [Event Perspective](#)
- [Health Perspective](#)
- [Performance Perspective](#)

### Event Perspective

The Event Perspective provides complete information of events. In the Event Perspective, you can view the event information of the Oracle CI that are monitored by OMi MP for Oracle Database.

To view the Event Perspective of Oracle CIs, follow these steps:

1. Open the Event Perspective pane:  
On BSM 9.2x, click **Applications > Operations Management > Event Perspective**.  
On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. In the **Browse Views** tab, select the **Oracle\_Database\_Deployment** that contains the Oracle CIs for which you want to view the events. Alternatively, you can use **Search** tab to find a Oracle CI.
3. Click the Oracle CI for which you want to view the Event Perspective. The list of events for the selected Oracle CI appears on the Event Browser pane.



When you click an event from the Event Browser, the Event Details pane opens where you can view the following details:

- **General** - Displays the detailed information about the selected event such as Severity, Lifecycle State, Priority, Related CI and so on.
- **Additional Info** - Displays more detailed information about the attributes of the selected event.
- **Source Info** - Displays an overview of the information available about the source of the selected event.
- **Actions** - Displays the list of actions available for a selected event. There are two types of possible actions: User Actions and Automatic Action.
- **Annotations** - Displays a list of the annotations attached to the selected event.
- **Custom Attributes** - Displays a list of the attributes that either an administrator or the responsible user manually configured and added to the selected event.
- **Related Events** - Displays an overview of all the events that are related to the event selected in the Event Browser.
- **History** - Displays the history of the selected event.
- **Resolver Hints** - Displays the information used to identify the node and CI associated with an event.
- **Instructions** - Displays instructions designed to help operators handle the associated event.
- **Forwarding** - Displays the transfer of ownership details if any, for the events.

## Health Perspective

The Health Perspective provides a high-level view of the overall health information of the related CIs in the context of events. In the Health Perspective, you can view the health information of the Oracle CIs that are monitored by OMi MP for Oracle Database.

To view the Health Perspective of Oracle CIs, follow these steps:

1. Open the Health Perspective pane:  
On BSM 9.2x, click **Applications > Operations Management > Health Perspective**.  
On OMi 10.x, click **Workspaces > Operations Console > Health Perspective**.
2. In the **Browse Views** tab, select the **Oracle\_Database\_Deployment** that contains the Oracle CIs for which you want to view the health related events. Alternatively, you can use **Search** tab to find an Oracle CI.
3. Click the **Oracle CI** for which you want to view the Health Perspective. The list of health related events for the selected Oracle CI appears on the Event Browser pane.


When you click an event from the Event Browser pane, the following panes appear:

- **Health Top View** - Displays the health top view of the selected event.
- **Health Indicators** - Displays the Key Performance Indicators (KPIs) and HIs related to the CI that you select from the Health Top View pane.
- **Actions** - Displays the list of actions available for a selected event.

## Performance Perspective

Performance Perspective enables you to populate graphs from existing graph templates. You can also plot customized graphs by selecting the required metrics for a specific CI.

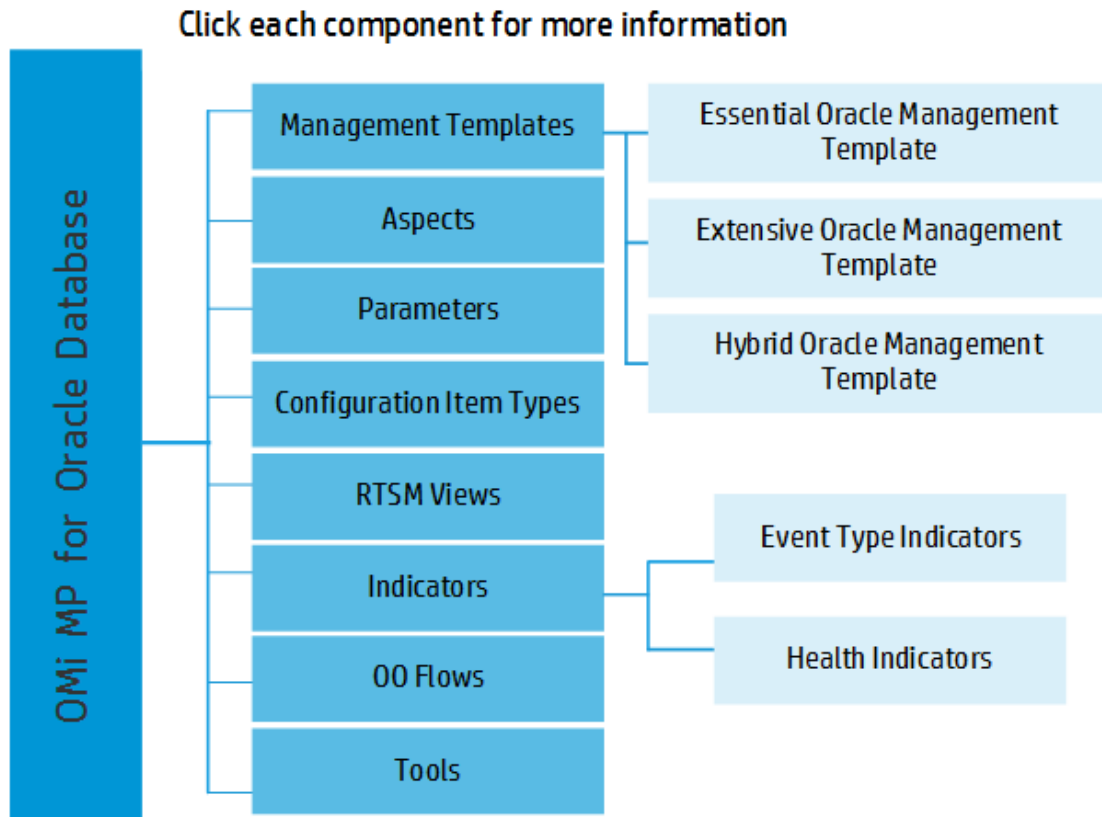
To view the Performance Perspective of Oracle CIs using graphs, follow these steps:

1. Open the Performance Perspective pane:  
On BSM 9.2x, click **Applications > Operations Management > Performance Perspective**.  
On OMi 10.x, click **Workspaces > Operations Console > Performance Perspective**.
2. In the **Browse Views** tab, select the **Oracle\_Database\_Deployment**. The list of CIs appear. Select a specific CI. The Performance pane appears, which lists the default graphs available for the **Oracle\_Database\_Deployment** view.
3. Click the graph you want to plot from the **Graphs** tab, and then click  **Draw Graphs**. The selected graph is plotted on the right pane.

**Note:** For more information about Event Perspective, Health Perspective, and Performance Perspective, see the *Operations Manager i Concepts Guide*.

## Chapter 3: Components

The OMi MP for Oracle Database includes the following components for monitoring Oracle databases in an environment:



## Oracle Management Templates

The Management Templates consists of several Aspects which enables you to monitor Oracle databases based on the criticality and type of the environment. By default, the OMi MP for Oracle Database consists of a set of Management Templates. You can deploy the out of the box Management Templates with the default parameters or you can customize the Management Templates based on your requirements. In addition, you can also create Management Templates based on the monitoring requirements using the Oracle Aspects.

### Overview

The OMi MP for Oracle Database comprises the following Management Templates:

- [Essential Oracle Management Template](#)
- [Extensive Oracle Management Template](#)
- [Hybrid Oracle Management Template](#)

## How to Access the Oracle Management Templates


1. Open Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > Database Management > Oracle > Oracle Management Templates**.

**Note:** For OMi MP for Oracle Database version 1.11 the Management Templates and Aspects version is 1.100.

## Tasks

### How to Automatically Assign Oracle Management Templates and Oracle Aspects


To automatically assign Oracle Management Templates or Oracle Aspects, you must specify the required privileges.

1. Open Automatic Assignment Rules pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Automatic Assignment Rules**.  
On OMi 10.x, click **Administration > Monitoring > Automatic Assignment Rules**.  
The pane consists of the Auto-Assignment Rules pane at the top, and a Parameter list at the bottom.
2. Click  **New Assignment** in the toolbar of the Auto-Assignment Rules pane and select the appropriate option.
3. In the **Select Target View** tab, select the Oracle view containing the CIs for which you want to create an automatic assignment, and click **Next**.
4. In the **Select Item to Assign** tab, select the Oracle management template or aspect that you want to automatically assign to all CIs with a CI type appearing in the selected view.


The list shows only the management templates that have a root CI type that appears in the view that you selected or, in case an aspect is auto-assigned, compatible aspects.

The latest version of the management template or aspect that you want to assign is selected by default. If required, select a different version in **Version** column.

Click **Next**.

5. In the **Required Parameter** tab, all the mandatory parameters in the management template are listed.
  - a. To change a parameter, double-click it, or select it in the list and click  **Edit**.
  - b. For standard parameters, the Edit Parameter dialog opens.  
Click **Value**, specify the value, and then click **OK**.
  - c. For instance parameters, the Edit Instance Parameter dialog opens.  
Add instance values, and then for each instance value, specify dependent parameter values. After you specify the instances and dependent parameter values, click **OK**.
  - d. Click **Next**.
6. *(Optional)*. In the **All Parameters/Parameter Summary** tab, specify a value for each parameter that

must be monitored against a different value than the default value.

- a. To change a parameter, double-click it, or select it in the list and click  **Edit**.
- b. For standard parameters, the Edit Parameter dialog opens.  
Click **Value**, specify the value, and then click **OK**.
- c. For instance parameters, the Edit Instance Parameter dialog opens.  
Add instance values, and then for each instance value, specify dependent parameter values. After you specify the instances and dependent parameter values, click **OK**.
- d. Click **Next**.

Click **Next** to go to the **Configure Options** tab, or **Finish** to save the assignment and close the wizard.

7. (Optional). In the **Configure Options** tab, clear the **Enable Assigned Objects** check box on BSM 9.2x or clear the **Enable Assignment(s)** check box on OMi 10.x, if you do not want to activate the assignment rule immediately.
8. Click **Finish** to save the changes and close the wizard.

The assignment rule is added to the list of auto-assignment rules.

An assignment may trigger an event to be sent to OMi if one of the following situations applies:

- A deployment job fails.
- An auto-assignment fails.
- An auto-assignment succeeds. This behavior can be configured in the Infrastructure Settings.


Follow the steps to check if the automatic assignment rule successfully created the expected assignments:

- Open Assignments & Tuning pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.  
On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
- In the **Browse Views** tab, select the view you identified when creating your automatic assignment rule.
- Expand the view, and select a node that corresponds to the root CI type of the assigned item.  
Assignments created as a result of Automatic Assignment Rules are shown in the list of assignments at the top of the right pane, and have the value `AutoAssignment` in the column **Assigned By**.

You can consider the following options for tuning the assignment:

- Use the Auto-Assignment Rules pane to tune the parameter values for all assignments triggered by the automatic assignment rule.
- Use the Assignments pane to tune, redeploy, delete, and enable or disable individual assignments.

### How to Display an Assignment Report for an Oracle Management Template

1. Select the Management Template you want to create the report for.
2. Click  **Generate Assignment Report** in the Management Templates & Aspects pane.

The preconfigured Assignment Report is displayed.

You can display additional types of reports from the Assignments & Tuning pane.

## Essential Oracle Management Template

The Essential Oracle Management Template can be used to monitor Oracle databases in an environment. It comprises of essential Oracle Aspects and Infrastructure Aspects for monitoring the availability, health, and

performance of Oracle database environments.

If you want to check the availability, health, and performance of the Oracle databases in your environment, and also want to monitor the basic functionalities of the Oracle features - tablespaces, memory, objects, segments, transactions, locks and latches. In such a scenario, you can deploy the Essential Oracle Management Template on all the Oracle CIs in the environment. The Essential Oracle Management Template comprises of specific Aspects to monitor these features.

**Note:** To use and deploy Infrastructure Aspects, you must install OMi Management Pack for Infrastructure software.

How to Access the Essential Oracle Management Template

1. Open Management Templates & Aspects pane:  
On BSM, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**  
On OMi, click **Administration > Monitoring > Management Templates & Aspects**
2. In the Configuration Folder pane, click **Configuration Folders > Database Management > Oracle > Oracle Management Templates > Essential Oracle Management Template.**

## User Interface Reference

### Management Template - General

Provides an overview of the attributes of the Management Template.

| UI Element         | Description  |
|--------------------|--|
| <b>Name</b>        | Essential Oracle Management Template   |
| <b>Description</b> | Manages Oracle database single instance environment in monitoring the primary areas of database like availability, Oracle IO performance, tablespace and Oracle alert log and others, along with essential infrastructure areas of CPU, Memory and Disk. |
| <b>ID</b>          | A unique identifier for this version.  |
| <b>Version ID</b>  | A unique identifier for this version of the Essential Oracle Management Template.  |
| <b>Version</b>     | The current version of the Essential Oracle Management Template.<br>In this instance, the version of the Management Template is 1.100.   |
| <b>Change Log</b>  | Text that describes what is new or modified in this version of the Essential Oracle Management Template.   |

## Management Template - Topology View

| UI Element           | Description  |
|----------------------|--|
| <b>Topology View</b> | ORA_Deployment is the Topology View for Essential Oracle Management Template. It contains the Oracle related CITs that you want to manage using the Management Template. |
| <b>CI Type</b>       | The type of CIs that the Essential Oracle Management Template enables you to manage. This is the type of CI to which the Management Template can be assigned.            |

## Management Template - Aspects

The Essential Oracle Management Template contains the following Oracle Aspects:

- [Basic Oracle Lock & Latches](#)
- [Basic Oracle Memory Performance](#)
- [Basic Oracle Segment Space](#)
- [Oracle Database Availability](#)
- [Oracle Discovery](#)
- [Oracle IO Performance](#)
- [Oracle Tablespace Health](#)
- [Oracle Transactions](#)

The Essential Oracle Management Template contains the following Infrastructure Aspects:

### Resource Bottleneck Diagnosis

The Resource Bottleneck Diagnosis Aspect identifies congestions and bottleneck conditions for system resources like the CPU, memory, network and disk. CPU bottleneck monitoring is based on global CPU utilization and load average (Run Queue Length).

### System Infrastructure Discovery

Discovers and gathers information regarding the system resources, operating system, and applications on a managed node.

### System Fault Analysis

The System Fault Analysis Aspect monitors the kernel log file, boot log file, and event log file for critical error conditions and instructions on what might have caused it.

## Extensive Oracle Management Template

The Extensive Oracle Management Template can be used for monitoring single instance databases and high availability environments - RAC, Data Guard, and ASM environments. This Management Template comprises complete set of Oracle Aspects and Infrastructure Aspects to monitor the availability, status, and health of the Oracle database environments.

Manages Oracle database single instance environment as well as High-availability environments in monitoring the primary and advanced areas of database such as availability, query performance, tablespace,

Real Application Cluster, DataGuard, ASM and Oracle alert log and so on along with deep infrastructure areas of CPU, Memory and Disk. The Extensive Oracle Management Template comprises of specific Aspects for monitoring these features.

**Note:** To use and deploy Infrastructure Aspects, you must install OMi Management Pack for Infrastructure software.

How to Access the Extensive Oracle Management Template

1. Open Management Templates & Aspects pane:  
On BSM, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folder pane, click **Configuration Folders > Database Management > Oracle > Oracle Management Templates > Extensive Oracle Management Template**.

## User Interface Reference

### Management Template - General

Provides an overview of the attributes of the Management Template.

| UI Element         | Description   |
|--------------------|---|
| <b>Name</b>        | Extensive Oracle Management Template  |
| <b>Description</b> | Manages Oracle database single instance environment in monitoring the advanced areas of database like query performance, archive health, database space utilization, objects and Oracle alert log etc along with advanced infrastructure areas of CPU, Memory and Disk. |
| <b>ID</b>          | A unique identifier for this version.   |
| <b>Version ID</b>  | A unique identifier for this version of the Extensive Oracle Management Template.   |
| <b>Version</b>     | The current version of the Extensive Oracle Management Template.<br>In this instance, the version of the Management Template is 1.100.  |
| <b>Change Log</b>  | Text that describes what is new or modified in this version of the Management Template.   |

### Management Template - Topology View

| UI Element           | Description   |
|----------------------|---|
| <b>Topology View</b> | ORA_Deployment is the Topology View for Extensive Oracle Management Templates. It contains the Oracle related CITs that you want to manage using the Management Template. |
| <b>CI Type</b>       | The type of CIs that the Extensive Oracle Management Template enables you to manage. This is the type of CI to which the Management Template can be assigned.             |



## Management Template - Aspects

The Extensive Oracle Management Template contains the following Oracle Aspects:

- [Basic Oracle Locks & Latches](#)
- [Basic Oracle Memory Performance](#)
- [Basic Oracle Query Performance](#)
- [Basic Oracle Segment Space](#)
- [Oracle Archive Health](#)
- [Oracle Database Availability](#)
- [Oracle Database Space Utilization](#)
- [Oracle Discovery](#)
- [Oracle IO Performance](#)
- [Oracle Object Faults](#)
- [Oracle Tablespace Health](#)
- [Oracle Transactions](#)

The Extensive Oracle Management Template contains the following Infrastructure Aspects:

### **Bandwidth Utilization and Network IOPS**

Monitors I/O operations, and performance of the systems in the network. It monitors the network I/O operations and performance based on the bandwidth used, outbound queue length and average bytes transferred per second.

### **CPU Performance**

Monitors I/O operations, and performance of the systems in the network. It monitors the network I/O operations and performance based on the bandwidth used, outbound queue length and average bytes transferred per second.

### **Memory and Swap Utilization**

Monitors memory performance of the system. Memory performance monitoring is based on Memory utilization (in percentage), Swap space utilization (in percentage), Free memory available (in MBs) and Free swap space available (in MBs).

### **Remote Disk Space Utilization**

Monitors the space utilization of the remote disk.

### **Space Availability and Disk IOPS**

Monitors the disk I/O operations and space utilization of the system.

### **System Infrastructure Discovery**

Discovers and gathers information regarding the system resources, operating system, and applications on a managed node.

## Hybrid Oracle Management Template

The Hybrid Oracle Management Template can be used for monitoring Oracle databases in an environment using agent and agentless monitoring. It comprises agent based Oracle Aspects, agent based Infrastructure Aspects, and agentless Oracle Aspects.

**Note:** To use and deploy Infrastructure Aspects, you must install OMi Management Pack for Infrastructure software.

How to Access the Hybrid Oracle Management Template

1. Open Management Templates & Aspects pane:  
On BSM, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folder pane, click **Configuration Folders > Database Management > Oracle > Oracle Management Templates > Hybrid Oracle Management Template**.

## User Interface Reference

### Management Template - General

Provides an overview of the attributes of the Management Template.

| UI Element         | Description  |
|--------------------|--|
| <b>Name</b>        | Hybrid Oracle Management Template  |
| <b>Description</b> | Manages Oracle database single instance environment in monitoring the primary areas of database like availability and performance through agent and agentless aspects along with essential infrastructure areas of CPU, Memory and Disk. |
| <b>ID</b>          | A unique identifier for this version.  |
| <b>Version ID</b>  | A unique identifier for this version of the Management Template.   |
| <b>Version</b>     | The current version of the Management Template.<br>In this instance, the version of the Management Template is 1.100.  |
| <b>Change Log</b>  | Text that describes what is new or modified in this version of the Management Template.  |

## Management Template - Topology View

| UI Element           | Description   |
|----------------------|---|
| <b>Topology View</b> | ORA_Deployment is the Topology View for Hybrid Oracle Management Template. It contains the Oracle related CITs that you want to manage using the Management Template.                                       |
| <b>CI Type</b>       | The type of CIs that the Oracle Management Template enables you to manage. This is the type of CI to which the Management Template can be assigned. The Oracle Management Templates contains Computer CITs. |

## Management Template - Aspects

The Hybrid Oracle Management Template comprises the following Oracle Aspects:

- [Basic Oracle Lock & Latches](#)
- [Basic Oracle Memory Performance](#)
- [Basic Oracle Segment Space](#)
- [Oracle Database Availability](#)
- [Oracle Discovery](#)
- [Oracle IO Performance](#)
- [Oracle Tablespace Health](#)
- [Oracle Transactions](#)

The Hybrid Oracle Management Template contains the following Agentless Aspects:

- [Oracle Database Availability \(Agentless\)](#)
- [Oracle Database Response Time \(Agentless\)](#)

The Hybrid Oracle Management Template contains the following Infrastructure Aspects:

### **System Infrastructure Discovery**

Discovers and gathers information regarding the system resources, operating system, and applications on a managed node.

### **Resource Bottleneck Diagnosis**

The Resource Bottleneck Diagnosis Aspect identifies congestions and bottleneck conditions for system resources like the CPU, memory, network and disk. CPU bottleneck monitoring is based on global CPU utilization and load average (Run Queue Length).

### **System Fault Analysis**

The System Fault Analysis Aspect monitors the kernel log file, boot log file, and event log file for critical error conditions and instructions on what might have caused it.

## Overview of Oracle Aspects

Oracle Aspects are used to monitor the building blocks or units of an Oracle database - tablespace, memory, objects, segments, Real Application Cluster (RAC), and Automatic Storage Management (ASM)

environments.

#### How to Access the Oracle Aspects

1. Open Management Templates & Aspects pane:  
On BSM, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi, click **Administration > Monitoring > Management Templates & Aspects**.
2. Click **Configuration Folders > Database Management > Oracle > Oracle Aspects**.

## Tasks

### Oracle Aspects

An Oracle Aspect comprises policy templates, instrumentation, and parameters for monitoring the health and performance of Oracle databases. Each Oracle Aspect can be used to monitor individual units of Oracle databases.

#### User Interface Reference

|                         |   |
|-------------------------|---|
| <b>General</b>          | Provides an overview of the general attributes of the Oracle Aspects.   |
| <b>CI Type</b>          | The type of CIs that the Aspect can be assigned to. This is the type of CI to which the Management Template can be assigned. The Oracle Aspects contain the Computer and Oracle CITs.                       |
| <b>Instrumentation</b>  | Provides a single package which contains the binaries for discovery, collection, and data logging.  |
| <b>Aspects</b>          | Provides an overview of Aspects that the Oracle Aspect contains. You can expand each item in the list to see more details about the nested aspect. The Oracle Base aspect is part of all the other Aspects. |
| <b>Policy Templates</b> | Provides an overview of the policy templates that the Oracle Aspect contains. You can expand each item in the list to see more details about the policy template.   |

#### Basic Oracle Locks and Latches

This Aspect monitors the consumption of Oracle locks (in percentage) and also checks the usage of the counters - session wait lock count and latch count. This is a basic type of Aspect.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description   | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0028   | N/A                   | Monitors the percentage of DML locks that are configured.        | Measurement Threshold Template |
|         | OracleDB_0029   | N/A                   | Monitors the number of sessions waiting for a release of a lock. |                                |
|         | OracleDB_0043   | N/A                   | Monitors the percentage of enqueue timeouts to enqueue requests. |                                |

## Basic Oracle Memory Performance

This Aspect monitors the Oracle memory units - BufferCache, Shared Pool, and Library Cache. This is a Basic type of Aspect.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description   | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0021   | N/A                   | Monitors the percentage of buffer busy waits to logical reads. | Measurement Threshold Template |
|         | OracleDB_0022   | N/A                   | Monitors the total percentage of buffer cache.                 |                                |
|         | OracleDB_0023   | N/A                   | Monitors the percentage of current buffer cache.               |                                |
|         | OracleDB_0024   | N/A                   | Monitors the percentage of enqueue waits to enqueue requests.  |                                |
|         | OracleDB_0026   | N/A                   | Monitors the percentage of cache in dictionary cache.          |                                |
|         | OracleDB_0027   | N/A                   | Monitors the percentage of library cache.                      |                                |
|         | OracleDB_0032   | N/A                   | Monitors the number of waits for redo log space.               |                                |
|         | OracleDB_0033   | N/A                   | Monitors the percentage of redo allocation latch failures.     |                                |
|         | OracleDB_0034   | N/A                   | Monitors the percentage of redo copy latch failures.           |                                |
|         | OracleDB_0035   | N/A                   | Monitors the rate of background checkpoints completed.         |                                |

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description                                       | Policy Type |
|---------|-----------------|-----------------------|--|-------------|
|         | OracleDB_0045   | N/A                   | Monitors the percentage of free pool memory.             |             |
|         | OracleDB_0083   | N/A                   | Monitors the rate of Database Writer (DBWR) checkpoints. |             |

## Basic Oracle Query Performance

This Aspect monitors the performance of Oracle queries by checking the Oracle metrics - Elapsed time and CPU time. This is a basic type of aspect.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description  | Policy Type                    |
|---------|-----------------|-----------------------|---|--------------------------------|
| Oracle  | OracleDB_0106   | Roll Up               | Monitors the SQL statements with high elapsed time per execution. | Measurement Threshold Template |
|         | OracleDB_0107   | Roll Up               | Monitors the SQL statements with high CPU time per execution.     |                                |
|         | OracleDB_0108   | Roll Up               | Monitors the SQL statements performing full table scan.           |                                |
|         | OracleDB_0119   | N/A                   | Monitors the number of heavy SQL statements.                      |                                |

## Basic Oracle Segment Space

This Aspect monitors the units of database storage - segments and extents. This is a basic type of aspect.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description                                   | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0016   | Roll Up               | Monitors the segments that cannot extend.            | Measurement Threshold Template |
|         | OracleDB_0215   | N/A                   | Monitors the segment size that is allocated (in MB). |                                |

## Oracle Archive Health

This Aspect monitors the Oracle device space, archive frequency rate, and redo logs that are not archived.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0056   | N/A                   | Monitors the number of archive logs that fit in archive device.  | Measurement Threshold Template |
|         | OracleDB_0057   | N/A                   | Monitors the average time in minutes between archive log writes. |                                |
|         | OracleDB_0058   | N/A                   | Monitors the percentage of free space on archive device.         |                                |
|         | OracleDB_0060   | N/A                   | Monitors the number of redo logs not archived.                   |                                |

## Oracle Database Availability

This Aspect monitors the Oracle database connection status, processes, and logons.

| CI Type | Policy Template         | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-------------------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0001           | N/A                   | Monitors the database status.                                  | Measurement Threshold Template |
|         | OracleDB_0002           | N/A                   | Monitors the database process check.                           |                                |
|         | OracleDB_0037           | N/A                   | Monitors the number of logons.                                 | ConfigFile Template            |
|         | OracleDB_0082           | N/A                   | Monitors the maximum number of sessions since startup.         | Measurement Threshold Template |
|         | OracleDB_0087           | N/A                   | Monitors the percentage of current processes to be configured. |                                |
|         | OracleDB_0201           | N/A                   | Reports uptime information.                                    | ConfigFile Template            |
|         | OracleDB_ListenerStatus | N/A                   | Checks and monitors the Oracle listener.                       | ConfigFile Template            |

## Oracle Database Availability (Agentless)

This Aspect monitors Oracle database connection status remotely.

| CI Type | Policy Template              | Roll Up or Drill Down Metric | Policy Description                     | Policy Type                    |
|---------|------------------------------|------------------------------|--|--------------------------------|
| Oracle  | Oracle Database Availability | N/A                          | Monitors Oracle database availability. | Measurement Threshold template |

## Oracle Discovery

This Aspect discovers the Oracle, RAC, and ASM instances.

| CI Type             | Policy Template        | Roll Up or Drill Down | Description  | Policy Type                     |
|---------------------|------------------------|-----------------------|--|---------------------------------|
| Computer and Oracle | OracleDB_Discovery     | N/A                   | This policy discovers the instances running on the nodes.  | Service Auto-Discovery Template |
|                     | OracleDB_DeepDiscovery | N/A                   | This policy discovers the databases, tablespaces, datafiles, and services on the managed nodes. It is scheduled to run once daily. | Scheduled Task                  |

## Oracle Database Response Time (Agentless)

This Aspect monitors Oracle database response time across network.

| CI Type | Policy Template               | Roll Up or Drill Down Metric | Policy Description                      | Policy Type                    |
|---------|-------------------------------|------------------------------|---|--------------------------------|
| Oracle  | Oracle Database Response Time | N/A                          | Monitors Oracle database response time. | Measurement Threshold template |

## Oracle Database Space Utilization

This Aspect monitors the Oracle dump device space, flash recovery area and the overall size of the database.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0062   | N/A                   | Monitors the percentage of space used on background dump device. | Measurement Threshold Template |
|         | OracleDB_0064   | N/A                   | Monitors the percentage of space used on user dump device.       |                                |



| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type |
|---------|-----------------|-----------------------|--|-------------|
|         | OracleDB_0065   | N/A                   | Monitors the percentage of space used on core dump device.                       |             |
|         | OracleDB_0066   | N/A                   | Monitors the size in MB of alert log.  |             |
|         | OracleDB_0136   | N/A                   | Monitors the percentage of disk space used by FRA.                               |             |
|         | OracleDB_0212   | N/A                   | Monitors the instance size that is allocated and the instance size that is free. |             |

## Oracle IO Performance

This Aspect monitors the physical and logical read rate of Oracle instances.

| CI Type | Policy Template | Roll Up or Drill Down | Description   | Policy Type                    |
|---------|-----------------|-----------------------|---|--------------------------------|
| Oracle  | OracleDB_0086   | N/A                   | Monitors the number of physical reads per minute.   | Measurement Threshold Template |
|         | OracleDB_0088   | N/A                   | Monitors the number of logical reads per minute.  |                                |
|         | OracleDB_0213   | N/A                   | Monitors the number of physical reads and writes to the disk since the last collection for each tablespace. | ConfigFile Template            |

## Oracle Object Faults

This Aspect monitors Oracle database objects like full table scan rate, index, triggers and so on.

| CI Type | Policy Template | Indicator | Description   | Policy Type           |
|---------|-----------------|-----------|---|-----------------------|
| Oracle  | OracleDB_0004   | NA        | Number of users default tablespace set to SYSTEM (E004_UsersTmpDfltCnt) | Measurement Threshold |
|         | OracleDB_0005   | NA        | Number of foreign objects in SYSTEM tblspc (E005_ObjectsForeignCnt)     |                       |

| CI Type | Policy Template | Indicator   | Description   | Policy Type |
|---------|-----------------|---|---|-------------|
|         | OracleDB_0030   | SQLQueryTuning:Low,<br>SQLQueryTuning:Normal                | Rate at which full table scans (long tables) occur (E030_FulLgTblScnRate) |             |
|         | OracleDB_0042   | SQLQueryTuning:Low,<br>SQLQueryTuning:Normal                | Percentage of never analyzed tables and indexes (E042_UnlyzTblIndxPct)    |             |
|         | OracleDB_0077   | DatabaseObjectStatus:Invalid,<br>DatabaseObjectStatus:Valid | SYS.DUAL status (E077_DualExssRowStat)                                    |             |
|         | OracleDB_0078   | DatabaseObjectStatus:Invalid,<br>DatabaseObjectStatus:Valid | Number of invalid objects (E078_ObjectsInvalidCnt)                        |             |
|         | OracleDB_0079   | NA  | Number of disabled triggers (E079_DisbldTrigrsCnt)                        |             |
|         | OracleDB_0080   | NA  | Number of disabled constraints (E080_DisbldCnstrtCnt)                     |             |

## Oracle Tablespace Health

This Aspect monitors the Oracle Table space status, free space, datafile status, and segments.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0007   | N/A                   | Monitors the number of tablespaces that are not online.                          | Measurement Threshold Template |
|         | OracleDB_0008   | N/A                   | Monitors the number of tablespaces with high ratio of block to physical reads.   |                                |
|         | OracleDB_0009   | N/A                   | Monitors the number of tablespaces with high use of temporary segments to total. |                                |
|         | OracleDB_0014   | N/A                   | Monitors the number of datafiles that are not online.                            |                                |
|         | OracleDB_0210   | N/A                   | Monitors the tablespace.   | ConfigFile Template            |

## Oracle Transactions

This Aspect monitors the Oracle transactions percentage, commit rate, and open cursor.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description  | Policy Type                    |
|---------|-----------------|-----------------------|---|--------------------------------|
| Oracle  | OracleDB_0031   | N/A                   | Monitors the number of users with percentage of open cursors to maximum configured. | Measurement Threshold Template |
|         | OracleDB_0084   | N/A                   | Monitors the long running transactions.   |                                |

## Oracle UDA

This Aspect monitors the user defined metrics.

| CI Type | Policy Template | Roll Up or Drill Down | Description                        | Policy Type                    |
|---------|-----------------|-----------------------|------------------------------------|--------------------------------|
| Oracle  | OracleDB_07XX   | N/A                   | Monitors the user defined metrics. | Measurement Threshold Template |
|         | OracleDB_UDM    | N/A                   | Sample template to create UDM.     | ConfigFile Template            |

## Oraspi Base

The Oraspi Base Nested Aspect is used for monitoring Oracle databases. This Nested Aspect is used by all the Basic and Advanced Aspects.

| CI Type | Policy Template   | Policy Description  | Policy Type            |
|---------|-------------------|---|------------------------|
| Oracle  | OracleDB_Messages | Interception of messages submitted by DB SPI programs.  | Open Message Interface |
|         | OracleDB_Logger   | Monitors the datalogger feed.   | Schedule Task          |
|         | OracleDB_VeryHigh | By default, runs the collector every 5 minutes. The schedule can be modified as required in the environment.  |                        |
|         | OracleDB_High     | By default, runs the collector every 15 minutes. The schedule can be modified as required in the environment. |                        |
|         | OracleDB_Medium   | By default, runs the collector every 1 hour. The schedule can be modified as required in the environment.     |                        |
|         | OracleDB_Low      | By default, runs the collector once in a day. The schedule can be modified as required in the environment.    |                        |
| Oracle  | OracleDB_AlertLog | Monitors the alert log file.  | LogFile Entry          |

| CI Type | Policy Template          | Policy Description   | Policy Type          |
|---------|--------------------------|--|----------------------|
|         | Oracle DB_ Configuration | This policy template contains the parameters (user id, password, listener name) for establishing connection to the Oracle databases. | Config File Template |

## List of Additional OOTB Aspects

OMi MP for Oracle Database provides additional out-of-the-box (OOTB) Aspects that are not part of any Management Template. You can deploy the required Aspects directly. Additionally, you can add these Aspects to the existing Management Template and then deploy the latest version.

### Oracle Advanced Replication

This Aspect monitors the errors and failures that occur in Oracle Advanced Replication Servers.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description                            | Policy Type                    |
|---------|-----------------|-----------------------|---|--------------------------------|
| Oracle  | OracleDB_0113   | N/A                   | Monitors the number of DBMS jobs.             | Measurement Threshold Template |
|         | OracleDB_0114   | N/A                   | Monitors the number of failed DBMS jobs.      |                                |
|         | OracleDB_0115   | N/A                   | Monitors the number of deferred transactions. |                                |
|         | OracleDB_0116   | N/A                   | Monitors the number of error transactions.    |                                |
|         | OracleDB_0117   | N/A                   | Monitors the number of failed admin requests. |                                |
|         | OracleDB_0118   | N/A                   | Monitors the number of failed material views. |                                |

### Oracle ASM Health

This Aspect monitors the Oracle ASM disk group status and disk group free space. This Aspect or the customized Management Template must be deployed on ASM CIs. While deploying, you must make sure to edit the **Oracle Instance Name** in the **Parameter Summary** tab. The Oracle ASM Instance parameter is dependent on various parameters such as Oracle ASM Monitor Frequency, Oracle ASM Instance, and others. You must make sure the **Oracle ASM Instance** parameter is set to **Yes**.

| CI Type | Policy Template | Roll Up or Drill Down | Policy Description                             | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0133   | N/A                   | Monitors the number of non-mounted diskgroups. | Measurement Threshold Template |
|         | OracleDB_0334   | N/A                   | Monitors the disk groups with low free space.  |                                |

To monitor tablespace in ASM environment, you can add Oracle Tablespace Health (Add-on) and Oracle Segment Space (Add-on) Aspects. For more information about the drill-down policies for these Aspects, see the section "[Oracle Roll-Up and Drill-Down Policies](#)".

## Oracle DataGuard Faults

This Aspect monitors the gaps and failures that occur in Oracle DataGuard servers. This Aspect or customized Management Template must be deployed on primary and standby nodes.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0126   | N/A                   | Monitors the duration (in hrs) for which the archived files are not sent to the standby databases. | Measurement Threshold Template |
|         | OracleDB_0127   | N/A                   | Monitors the number of dataguard destinations that are getting errors or are in an invalid state.  |                                |
| Oracle  | OracleDB_0128   | N/A                   | Monitors the number of hours the log files are not applied to the standby databases.               |                                |
|         | OracleDB_0129   | N/A                   | Monitors the number of hours the last sql query was processed on the logical standby databases.    |                                |
|         | OracleDB_0130   | N/A                   | Monitors the latest time stamp in the redo was received on the logical standby databases.          |                                |

| CI Type | Policy Template | Roll Up or Drill Down | Description                                      | Policy Type |
|---------|-----------------|-----------------------|--|-------------|
|         | OracleDB_0137   | N/A                   | Monitors the fast-start failovers that occurred. |             |

## Oracle RAC Health

The Oracle Real Application Cluster (RAC) Aspect monitors the status and performance of Oracle Real Application Clusters. This Aspect or customized Management Template should not be deployed to virtual Oracle RAC Database name. Aspects or customized Management Template must be deployed only to the actual Oracle instances on the node.

| CI Type | Policy Template               | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-------------------------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0121                 | N/A                   | Monitors the number of blocks that encounter a failure during interconnect.  | Measurement Threshold Template |
|         | OracleDB_0122                 | N/A                   | Monitors the number of blocks that get lost during interconnect.   |                                |
|         | OracleDB_0123                 | N/A                   | Monitors the average waiting time for consistent read per block.   |                                |
|         | OracleDB_0131                 | N/A                   | Monitors the number of blocks that are received during interconnect.   |                                |
| Oracle  | OracleDB_0132                 | N/A                   | Monitors the datafiles of cluster databases with highest sum of rate of transfer for consistent read blocks as well as current blocks. | LogFile Entry Template         |
|         | OracleDB_0146                 | N/A                   | Monitors the CRS NodeApps Virtual IP status.   |                                |
|         | OracleDB_0147                 | N/A                   | Monitors the CRS NodeApps Listener status.   |                                |
|         | OracleDB_0148                 | N/A                   | Monitors the CRS NodeApps Global Service Daemon status.  |                                |
|         | OracleDB_0149                 | N/A                   | Monitors CRS NodeApps Oracle Notification Service status.  |                                |
|         | OracleDB_0150                 | N/A                   | Monitors Oracle RAC VIP Relocation of a node.  |                                |
|         | Oracle CRS Alert Log Template | N/A                   | Monitors the Oracle CRS Alert Log file.  |                                |

## Oracle Locks & Latches (Add-on)

Monitors Oracle locks latch, disabled table locks and so on.

| CI Type | Policy Template | Indicator   | Description   | Policy Type           |
|---------|-----------------|---|---|-----------------------|
| Oracle  | OracleDB_0038   | LatchContentionRatio:High,<br>LatchContentionRatio:Normal | Number of latches with high contention ratio > threshold (E038_LtchOvrLimitCnt) | Measurement Threshold |
|         | OracleDB_0097   | NA  | Number of tables with table locks disabled (E097_DisbldTblLckNum)               |                       |

## Oracle Memory Performance (Add-on)

Monitors Oracle Memory units BufferCache, Shared Pool, Library Cache and so on.

| CI Type | Policy Template | Indicator   | Description  | Policy Type           |
|---------|-----------------|---|--|-----------------------|
| Oracle  | OracleDB_0040   | LibraryCacheFunctioning:LowPinHits,<br>LibraryCacheFunctioning:Normal | Monitors the percentage of pinhits to pins in dictionary cache (E040_LibCacPinHitPct). | Measurement Threshold |
|         | OracleDB_0020   | MemorySortRate:Low,<br>MemorySortRate:Normal                          | Monitors the percentage of memory sorts (E020_SortMemoryPct).                          |                       |
|         | OracleDB_0051   | NA  | Average number of rows per sort.   | ConfigFile            |

| CI Type | Policy Template | Indicator   | Description  | Policy Type           |
|---------|-----------------|---|--|-----------------------|
|         | OracleDB_0039   | LibraryCacheFunctioning:LowGetHits,<br>LibraryCacheFunctioning:Normal | Monitors the percentage of gethits to gets in dictionary cache (E039_LibCacGetHitPct). | Measurement Threshold |
|         | OracleDB_0059   | NA  | Monitors the percentage of cursors in cache parameter (E059_CursorCachePct).           |                       |
| Oracle  | OracleDB_0075   | DBCallRate:High,<br>DBCallRate:Normal                                 | Ratio of recursive calls to cumulative opened cursors (E075_RcrsvCursrRatio).          |                       |
|         | OracleDB_0019   | MemorySortRate:Low,<br>MemorySortRate:Normal                          | Monitors the rate at which the disk is sorted. (E019_SortDiskRate).                    |                       |
|         | OracleDB_0052   | TotalSortRate:High,<br>TotalSortRate:Normal                           | Monitors the rate of total sorts on disk and in memory. (E052_SortTotalRate).          |                       |

## Oracle Object Faults (Add-on)

Monitors Oracle database objects like table, index, triggers and so on.

| CI Type | Policy Template | Indicator                                    | Description   | Policy Type           |
|---------|-----------------|--|---|-----------------------|
| Oracle  | OracleDB_0047   | NA   | Monitors the number of tables that are cached.                          | ConfigFile            |
|         | OracleDB_0046   | SQLQueryTuning:Low,<br>SQLQueryTuning:Normal | Monitors the percentage of rows fetched by index (E046_RowFetcbIdxPct). | Measurement Threshold |
|         | OracleDB_0048   | SQLQueryTuning:Low,<br>SQLQueryTuning:Normal | Monitors the percentage of chained rows fetched (E048_ChandRowFtchPct). |                       |
|         | OracleDB_0041   | NA   | Monitors the rate at which full table scans (short tables) occur.       | ConfigFile            |
|         | OracleDB_0081   | NA   | Monitors the number of snapshot errors (E081_SnapshotErrCnt).           | Measurement Threshold |



## Oracle Query Performance (Add-on)

Monitors Oracle Query Performance like Disk reads, SQL fetches and so on.

| CI Type | Policy Template | Indicator   | Description   | Policy Type           |
|---------|-----------------|---|---|-----------------------|
| Oracle  | OracleDB_0103   | LongTableScansPct:High,<br>LongTableScansPct:Normal       | Monitors the SQL statements with long table scans (E103_SQLScanRowsMax).                                | Measurement Threshold |
|         | OracleDB_0105   | NA  | Monitors the number of SQL statement with high buffer gets per execution (E105_BufferGetsPerExecRatio). | Measurement Threshold |
|         | OracleDB_0102   | NA  | Monitors the SQL statements with high fetches (E102_SQLFetchesMax).                                     | Measurement Threshold |
|         | OracleDB_0104   | NA  | Monitors the SQL statements with high execution rate (E104_SQLExecRateMax).                             | Measurement Threshold |
|         | OracleDB_0101   | SQLDiskReadWriteRate:High,<br>SQLDiskReadWriteRate:Normal | Monitors the number of SQL statement with high disk reads per execution (E101_DiskReadsPerExecRatio).   | Measurement Threshold |

## Oracle Segment Space (Add-on)

Monitors Oracle Segment maximum extents and so on.

| CI Type | Policy Template | Indicator   | Description  | Policy Type           |
|---------|-----------------|---|--|-----------------------|
| Oracle  | OracleDB_0017   | DatabaseSegmentUsageLevel:High,<br>DatabaseSegmentUsageLevel:Normal | Monitors the number of segments approaching maximum extent (E017_SegMaxExtentCnt). | Measurement Threshold |
|         | OracleDB_0018   | NA  | Monitors the number of segments adding extents rapidly (E018_SegExtRapidCnt).      | Measurement Threshold |

## Oracle Tablespace Health (Add-on)

Monitors Oracle Tablespace freespace count, fragment count and size.

| CI Type | Policy Template | Indicator   | Description  | Policy Type           |
|---------|-----------------|---|--|-----------------------|
| Oracle  | OracleDB_0006   | TablespaceUsageLevel:High,<br>TablespaceUsageLevel:Normal | Monitors the number of table spaces with low free space percentage (E006_TblSpFreePctCnt). | Measurement Threshold |
|         | OracleDB_0011   | TablespaceFSFI:High,<br>TablespaceFSFI:Normal             | Monitors the number of fragmented tablespaces (E011_TblSpcFrgmntCnt).                      |                       |
|         | OracleDB_0003   | NA  | Monitors the number of table spaces with low free extents (E003_TblSpaceFreeCnt).          |                       |

## Oracle Transactions (Add-on)

Monitors Oracle transactions percentage, commit rate, roll back rate, and so on.

| CI Type | Policy Template | Indicator   | Description  | Policy Type           |
|---------|-----------------|---|--|-----------------------|
| Oracle  | OracleDB_0054   | NA  | Monitors the rate at which rollbacks are being generated (E054_RollbackRate).        | Measurement Threshold |
|         | OracleDB_0044   | NA  | Monitors the number of transactions.   | ConfigFile            |
|         | OracleDB_0049   | NA  | Monitors the rate of user calls.   |                       |
|         | OracleDB_0085   | ServerTransactionRate:High,<br>ServerTransactionRate:Normal | Monitors the percentage of current transactions to configured (E085_TransactionPct). | Measurement Threshold |
|         | OracleDB_0050   | DBCallRate:High,<br>DBCallRate:Normal                       | Monitors the ratio of recursive calls to user calls (E050_RcsvUsrCalRatio).          |                       |

## Oracle Parallel Query Performance

The Oracle Parallel Query Aspect monitors the Oracle parallel query rate and busy percentage.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0070   | N/A                   | Monitors the percentage of parallel query servers that are busy. | Measurement Threshold Template |

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type |
|---------|-----------------|-----------------------|--|-------------|
|         | OracleDB_0071   | N/A                   | Monitors the percentage of parallel query servers busy with high watermark.                    |             |
| Oracle  | OracleDB_0074   | N/A                   | Monitors the rate of parallel queries initiated.   |             |
|         | OracleDB_0076   | N/A                   | Monitors the percentage of full table scans through row id range compared to total table scan. |             |

## Oracle Sessions Performance

The Oracle Sessions Aspect monitors the Oracle Sessions performance.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0109   | Roll Up               | Monitors the sessions with high number of hard parses. | Measurement Threshold Template |
|         | OracleDB_0110   | Roll Up               | Monitors the sessions with high free buffer wait.      |                                |
|         | OracleDB_0111   | Roll Up               | Monitors the sessions with high latch free wait.       |                                |
|         | OracleDB_0112   | Roll Up               | Monitors the sessions with high suspended time.        |                                |
|         | OracleDB_0309   | Drill Down            | Monitors the sessions with hard number of parses.      |                                |
|         | OracleDB_0310   | Drill Down            | Monitors sessions with high free buffer wait.          |                                |
|         | OracleDB_0311   | Drill Down            | Monitors sessions with high free latch wait.           |                                |
|         | OracleDB_0312   | Drill Down            | Monitors sessions with high suspended time.            |                                |

## Oracle Shared Server Performance

This Aspect monitors the Oracle shared server percentage and dispatcher busy percentage.

| CI Type | Policy Template | Roll Up or Drill Down | Description  | Policy Type                    |
|---------|-----------------|-----------------------|--|--------------------------------|
| Oracle  | OracleDB_0090   | N/A                   | Monitors the percentage busy for all dispatchers.                          | Measurement Threshold Template |
|         | OracleDB_0091   | N/A                   | Monitors the percentage of clients currently connected to all dispatchers. |                                |
|         | OracleDB_0092   | N/A                   | Monitors the percentage of shared servers waiting for requests.            |                                |
|         | OracleDB_0095   | N/A                   | Monitors the maximum percentage of shared pool allocated to UGA.           |                                |
|         | OracleDB_0096   | N/A                   | Monitors the percentage of high water to maximum shared server processes.  |                                |

## Oracle Streams

This Aspect monitors Oracle Stream pool size and errors.

| CI Type | Policy Template | Roll Up or Drill Down | Description   | Policy Type                    |
|---------|-----------------|-----------------------|---|--------------------------------|
| Oracle  | OracleDB_0140   | N/A                   | Reports the estimated optimum size proposed for Oracle streams pool.  | Measurement Threshold Template |
|         | OracleDB_0141   | N/A                   | Monitors the capture processes having errors in an Oracle streams environment.  |                                |
|         | OracleDB_0142   | N/A                   | Monitors propagation errors in an Oracle streams environment.   |                                |
|         | OracleDB_0143   | N/A                   | Monitors the apply processes having errors in an Oracle streams environment.  |                                |
| Oracle  | OracleDB_0144   | N/A                   | Monitors the general apply errors in an Oracle streams environment.   |                                |
|         | OracleDB_0145   | N/A                   | Monitors the number of messages that are captured to apply latency higher than the specified threshold in Oracle streams environment. |                                |

# Policy Template Group

All the Oracle policy templates are available under the **Oracle Database MP** template group.

## How to View Policy Template Group

1. Open the Policy Template Groups pane:
  - On BSM 9.2x, click Admin > Operations Management > Monitoring > Policy Templates.
  - On OMi 10.x, click Administration > Monitoring > Policy Templates.
2. In the Policy Template Groups pane, expand **Template Groups** and click the **Oracle Database MP**.

## Grouping of Policy Templates

Grouping of Policy Templates

Following is the list of policy templates of OMi MP for Oracle Database.

| Template Category | Policy Template        |
|-------------------|------------------------|
| ConfigFile        | OracleDB_0037          |
|                   | OracleDB_0041          |
|                   | OracleDB_0044          |
| ConfigFile        | OracleDB_0047          |
|                   | OracleDB_0049          |
|                   | OracleDB_0051          |
|                   | OracleDB_0201          |
| ConfigFile        | OracleDB_0210          |
|                   | OracleDB_0212          |
|                   | OracleDB_0213          |
|                   | OracleDB_0215          |
|                   | OracleDB_Configuration |
|                   | OracleDB_ListnerStatus |
|                   | OracleDB_UDM           |
| LogFile Entry     | OracleDB_AlertLog      |
|                   | OracleDB_CRSAAlertLog  |

| Template Category     | Policy Template                |
|-----------------------|--------------------------------|
| Measurement Threshold | OracleDB_0001 to OracleDB_0009 |
|                       | OracleDB_0011                  |
|                       | OracleDB_0014                  |
|                       | OracleDB_0016 to OracleDB_0024 |
|                       | OracleDB_0026 to OracleDB_0035 |
|                       | OracleDB_0038 to OracleDB_0043 |
|                       | OracleDB_0045                  |
|                       | OracleDB_0046                  |
|                       | OracleDB_0048                  |
| Measurement Threshold | OracleDB_0050                  |
|                       | OracleDB_0052                  |
|                       | OracleDB_0054 to OracleDB_0060 |
|                       | OracleDB_0062                  |
|                       | OracleDB_0064 to OracleDB_0066 |
|                       | OracleDB_0070                  |
|                       | OracleDB_0071                  |
|                       | OracleDB_0074 - OracleDB_0088  |
|                       | OracleDB_0090 to OracleDB_0097 |
|                       | OracleDB_0101 to OracleDB_0119 |
|                       | OracleDB_0121 to OracleDB_0123 |
|                       | OracleDB_0126 to OracleDB_0133 |
|                       | OracleDB_0136                  |
|                       | OracleDB_0137                  |
|                       | OracleDB_0140 to OracleDB_0150 |

| Template Category      | Policy Template                |
|------------------------|--------------------------------|
| Measurement Threshold  | OracleDB_0203                  |
|                        | OracleDB_0206                  |
|                        | OracleDB_0216 to OracleDB_0218 |
|                        | OracleDB_0301 to OracleDB_0312 |
|                        | OracleDB_0334                  |
|                        | OracleDB_07XX                  |
| Open Message Interface | OracleDB_Messages              |
| Scheduled Task         | OracleDB_DeepDiscovery         |
|                        | OracleDB_High                  |
|                        | OracleDB_Logger                |
|                        | OracleDB_Low                   |
|                        | OracleDB_Medium                |
|                        | OracleDB_VeryHigh              |
| SiteScope              | Oracle Database Availability   |
|                        | Oracle Database Response Time  |

## Parameters

Parameters are variables that are an integral component of Oracle Management Templates, Oracle Aspects, and Policy Templates. Each parameter corresponds to a variable. Parameters contain default values that are used for monitoring the different components of Oracle databases. You can also modify the values of the variables to suit your monitoring requirements.

## Types of Parameters

The parameters are grouped as follows:

- **Instance Parameters** - These parameters are essential for monitoring Oracle CIs. For example, Oracle instance name is an Instance Parameter.
- **Mandatory Parameters** - These parameters contain the essential information required by policy templates. For example, Oracle instance name is a mandatory parameter.
- **Dependent Parameters** - There are some parameters which are a subset of the mandatory parameters. Such parameters are referred to as dependent parameters. For example, Oracle username is a dependent parameter of Oracle instance name.
- **Expert Parameters** - These parameters can be used by SMEs and Administrators.

## OMi MP for Oracle Database Parameters

OMi MP for Oracle Database contains the following parameters:


| Parameter                        | Parameter Type | Description  | Default Values |
|----------------------------------|----------------|--|----------------|
| Oracle Instance Name             | Mandatory      | Oracle Instance Name that should be monitored.   | CI Name        |
| Oracle Instance User Name        | Dependent      | Oracle User Name with the required privileges to collect data.   |                |
| Oracle Instance Password         | Dependent      | Password for Oracle User Name.   |                |
| Filter                           | Expert         | Filter the monitored components. For example, Oracle Segment Filter parameter filters the segments for monitoring.   |                |
| Oracle Instance Collection       | Expert         | Turn on or off collection for Oracle Instance.   | ON             |
| Oracle Instance Tracing          | Expert         | Enable Tracing on or off for trace to be captured on node at %ovdatadir%/dbspi/log/trace .                           | OFF            |
| Frequency of High Scheduler      | Expert         | Frequency for the scheduler which is expected to run for high intervals (in minutes).                                | 15             |
| Frequency of Low Scheduler       | Expert         | Frequency for the scheduler which is expected to run for short intervals (in hours).                                 | 24             |
| Frequency of Medium Scheduler    | Expert         | Frequency for the scheduler which is expected to run for medium intervals (in hours).                                | 1              |
| Frequency of Very High Scheduler | Expert         | Frequency for the scheduler which is expected to run for very high intervals (in minutes).                           | 5              |
| Frequency                        | Mandatory      | Frequency of monitoring by a policy template. For example, the frequency of monitoring Oracle Database availability. |                |



| Parameter | Parameter Type | Description   | Default Values |
|-----------|----------------|---|----------------|
| Threshold | Mandatory      | Threshold of a policy template. For example, the threshold of monitoring available database nodes.          |                |
| Severity  | Mandatory      | Severity level of a policy template. For example, the severity of monitoring critical database nodes count. |                |

## Tuning Parameters

You can edit the parameters of the Oracle Management Templates and Oracle Aspects that are already deployed to the CIs.

- Open Assignments & Tuning pane:
  - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.
  - On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
- In the **Browse Views** tab, select the **Oracle\_Database\_Deployment** view that contains the CI for which you want to tune parameters. Alternatively, you can use the Search tab to find a CI.
- In the list of Oracle CIs, click a CI. The Assignments pane shows details of any existing assignments for the Oracle CI.
- Click the assignment for which you want to tune parameters. The Assignment Details pane shows the current parameter values.
- In the Assignment Details pane, change the parameters:
  - (Optional). By default, the list shows only mandatory parameters.
  - Select a parameter in the list, and then click .
    - For standard parameters, the Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
    - For instance parameters, the Edit Instance Parameter dialog box opens. Change the instance values if necessary, and then for each instance value, change dependent parameter values. After you change the instances and dependent parameter values, click **OK**.
- In the Assignment Details pane, click **Save Changes**. Operations Console deploys the new parameter values to the relevant HP Operation Agents.

## Configuration Items (CIs) and Configuration Item Types (CITs)

CIs are components that have to be managed in order to deliver an IT Service. CIs typically include IT Services, hardware, and software.

CIT describes the type of a CI and its attributes. The Oracle CIs that are discovered in an environment are grouped under the CITs. OMi MP for Oracle Database comprises the following CITs:

- Oracle
- Oracle RAC
- Oracle Tablespace
- Oracle Data File

## Run-time Service Model (RTSM) Views

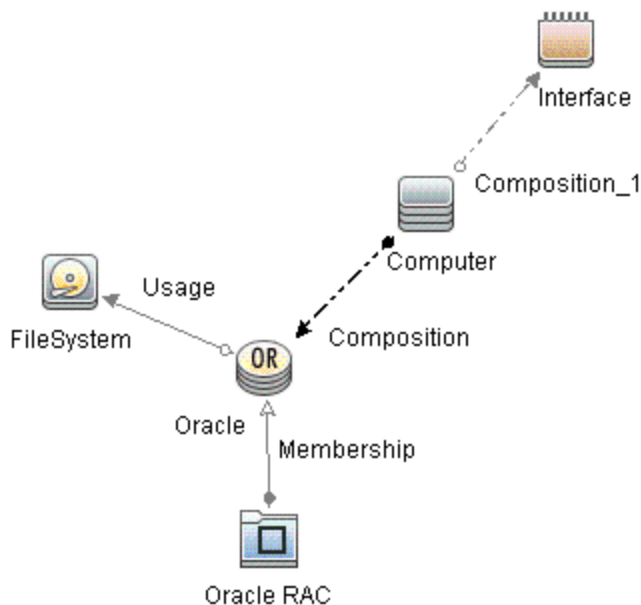
A View enables you to build and visualize a subset of the overall CI model that comprises Oracle CITs related to specific area of interest.

### How to Access RTSM Views

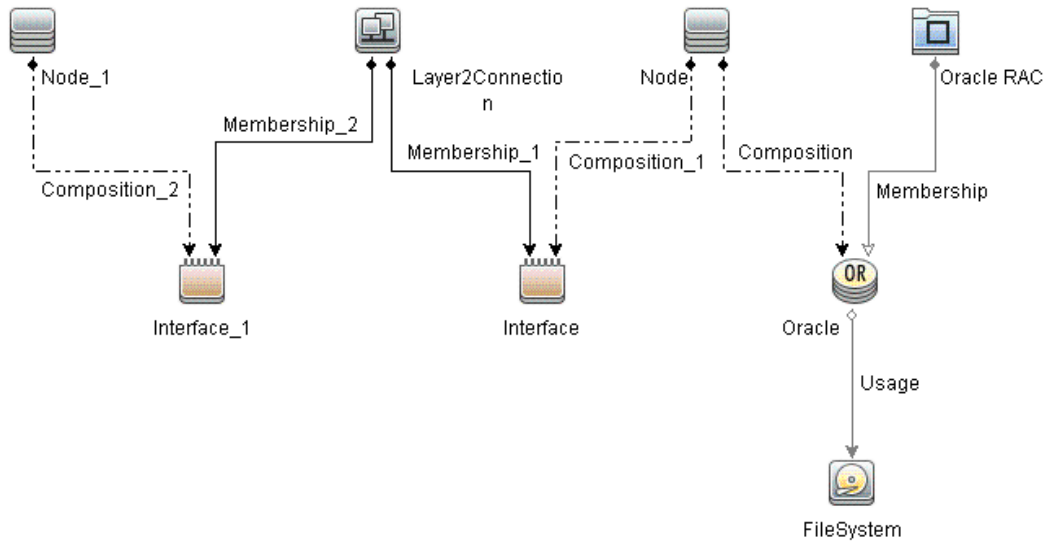
1. Open Modeling Studio pane:  
On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Modeling Studio**.  
On OMi 10.x, click **Administration > RTSM Administration > Modeling > Modeling Studio**.
2. Click **Resource Type** as **Views**.
3. Click **Database > Oracle** from the list.

By default, OMi MP for Oracle Database includes the following Views:

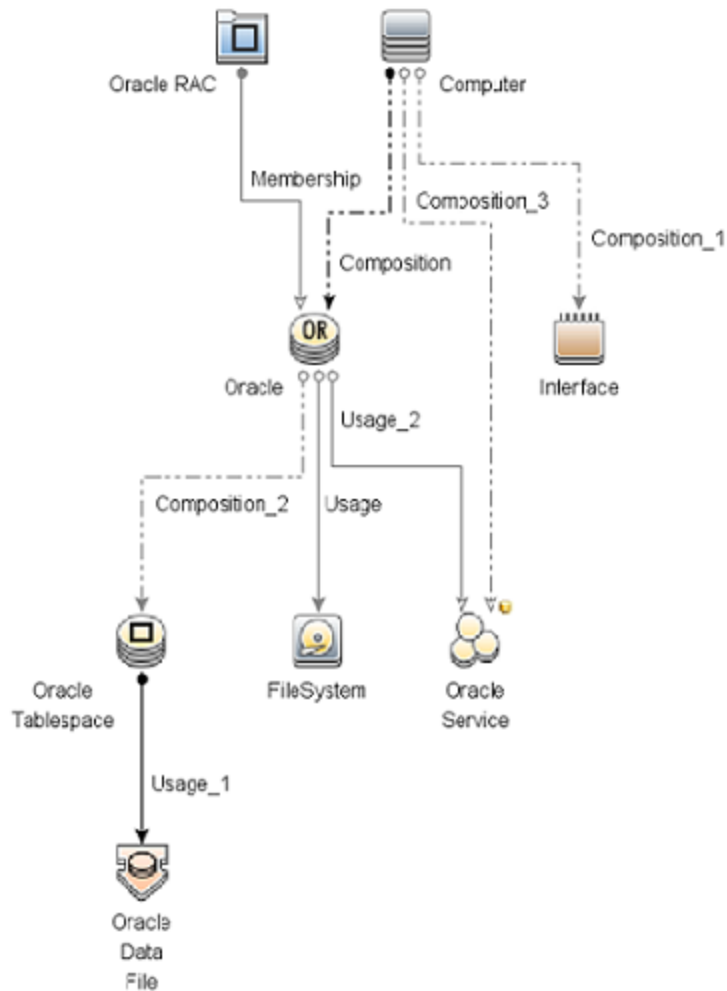
- **ORA\_Deployment:** This view refers to the Oracle, Oracle RAC, Computer, and File System CITs. The following image shows the relationship among the CITs.



- **ORA\_Network\_Deployment:** This view refers to the Oracle, Oracle RAC, Node, Interface, and File System CITs. The following image shows the relationship among the CITs.



- Oracle\_Database\_Deployment:** This view refers to the Oracle, Oracle RAC, Node, Interface, File System, Service, Tablespace, and Data File CITs. The following image shows the relationship among the CITs.



## Event Type Indicators (ETIs)

ETIs are categorization of events based on the type of occurrence. The OMi MP for Oracle Database includes the following ETIs to monitor Oracle-related events:

### How to Access the Event Type Indicators

1. Open Indicators pane:  
 On BSM 9.2x, click **Admin > Operations Management > Monitoring > Indicators**.  
 On OMi 10.x, click **Administration > Service Health > Health- and Event Type Indicators**.
2. In the CI Type pane, click **InfrastructureElement > RunningSoftware > Database > Oracle**.

| CI Type        | ETI  | Description  | Value                  |
|----------------|--|--|------------------------|
| Oracle         | Archive Status   | Indicates the status of an Oracle Archive Log.   | Normal                 |
|                | Checkpoint Rate  | Indicates high checkpoint rate.  | Normal                 |
|                | Control File ReadWrite Status                          | Indicates Oracle control file read or write errors.  | Normal                 |
|                | Flash Recovery Errors                                  | Indicates the errors related to flash recovery in an Oracle Instance.  | Normal                 |
|                | Heavy SQL Statements                                   | Indicates the number of heavy SQL statements in an Oracle Instance.  | Normal                 |
|                | Latch Contention Ratio                                 | Indicates possible latching problems.  | Normal                 |
|                | Latch Hit Ratio  | Indicates possible latching problems.  | Normal, High           |
|                | Locks Usage Level                                      | Indicates the ratio of locks used in an Oracle database Instance.  | Normal, High           |
|                | Materialized View Errors                               | Indicates the errors related to materialized views in an Oracle database instance.                                     | Normal                 |
|                | Memory Sort Rate                                       | Indicates the ratio of which memory sorts have been performed. A low memory sort ratio implies a high disk sort ratio. | Normal                 |
|                | Oracle Database Process Status                         | Indicates Oracle database service/process status.  | Running                |
|                | Oracle Disk ReadWrite Errors                           | Indicates Oracle disk read write errors.   | Normal                 |
|                | Oracle Session Count                                   | Indicates Oracle session count to be configured.   | Normal                 |
| Streams Errors | Indicates the errors in an Oracle streams environment. | Normal   |                        |
| Database       | SQL Query Tuning                                       | Indicates SQL statements with low query tuning.  | Normal                 |
| Oracle         | Tablespaces Free Space Fragmentation Index             | Indicates the fragmented tablespaces in an Oracle database Instance.   | Normal, Moderate, High |
|                | Total Sort Rate  | Indicates the total sorts on disk and in memory in an Oracle database Instance.  | Normal                 |

The CITs from HPOM that are mapped to RTSM (Run-time Service Model) using the OMi MP for Oracle Database are **Oracle** and **Oracle RAC**.

## Health Indicators (HIs)

HIs analyze the events that occur in Oracle CIs and report the health of the Oracle CIs. The OMi MP for Oracle Database includes the following HIs to monitor the Oracle-related events:

### How to Access the Health Indicators

1. Open Indicators pane:
  - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Indicators**.
  - On OMi 10.x, click **Administration > Service Health > Health- and Event Type Indicators**.
2. In the CI Type pane, click **InfrastructureElement > RunningSoftware > Database > Oracle**.

| CI Type  | HI                            | Description  | Value                                   |
|----------|-------------------------------|--|---|
| Database | CPU Usage by SQL              | Indicates SQL statements with high CPU time per execution.                       | High<br>Normal                          |
|          | Server Transaction Rate       | Indicates the rate of transactions for the entire database server.               | High<br>Normal                          |
|          | SQL Query Tuning              | Indicates SQL statements with low query tuning.                                  | Low<br>Normal                           |
| Oracle   | Database Object Status        | Indicates database object status.  | Invalid<br>Valid<br>Enabled<br>Disabled |
|          | Database Segment Status       | Indicates the status of segments in an Oracle database instance.                 | Normal<br>Inextensible                  |
|          | Database Segment Usage Level  | Indicates the usage of segments in an Oracle database Instance.                  | High<br>Normal                          |
| Database | Database Server Status        | Indicates database server availability.  | Up<br>Down                              |
| Oracle   | Datafiles Status              | Indicates Oracle datafiles status.   | Online<br>Offline                       |
|          | Default Bufferpool Busy Ratio | Indicates the ratio of buffered data requests of the Oracle default buffer pool. | High<br>Low                             |
|          | Default Bufferpool Hit Ratio  | Indicates the ratio of buffered data requests of the Oracle default buffer pool. | High<br>Normal<br>Low                   |
| Oracle   | Dictionary Cache Miss Ratio   | Indicates the effectiveness of the Oracle dictionary cache.                      | High<br>Normal<br>Low                   |

| CI Type | HI  | Description  | Value  |
|---------|---|--|--|
|         | Dispatcher Busy Ratio by Network          | Indicates the workload of the Oracle dispatcher.   | High<br>Normal<br>Low                            |
|         | Dispatcher Process Queue Response Time    | Indicates the average time an item in the Oracle dispatcher queue waits before being processed.  | High<br>Low                                      |
| Oracle  | Flash Recovery Area Usage Level           | Indicates the availability of an Oracle instance as affected by the percentage of space used by Flash Recovery Area.   | High<br>Medium<br>Normal                         |
|         | Library Cache Functioning                 | Indicates the performance of an Oracle database instance as affected by:<br><br>1 - library cache misses to executions<br><br>2 - library cache get hits to gets<br><br>3 - library cache pin hits to pins | HighReload<br>LowGetHits<br>LowPinHits<br>Normal |
|         | Logical Read Rate                         | Indicates the performance of an Oracle instance as affected by the number of logical reads per min.  | High<br>Normal                                   |
|         | Long Table Scans Percentage               | Indicates the percentage of long table scans that are performed.   | High<br>Normal<br>Low                            |
|         | Oracle Background Dump Device Usage Level | Indicates Oracle background dump device space usage.   | High<br>Normal                                   |

| CI Type  | HI                                  | Description   | Value            |
|----------|-------------------------------------|---|------------------|
| Oracle   | Oracle Core Dump Device Usage Level | Indicates Oracle core dump device space usage.  | High Normal      |
|          | Oracle Opened Cursor Current        | Indicates the Oracle current opened cursor.   | High Normal      |
|          | Oracle Parse Count (Hard)           | Indicates the hard parses during the sample period.   | High Normal      |
|          | Oracle Parse Count (Failures)       | Indicates the Oracle parse failures.  | High Normal      |
|          | Oracle Session Connect Time         | Indicates the connect time for the Oracle session.  | High Normal      |
|          | Oracle User Dump Device Usage Level | Indicates Oracle user dump device space usage.  | High Normal      |
|          | Oracle Users Call Rate              | Indicates rate of recursive calls to user calls and rate of recursive calls to cumulative opened cursors.     | High Normal      |
|          | Physical Read Rate                  | Indicates the performance of an Oracle instance as affected by the number of physical reads per min.          | High Normal      |
|          | Row Cache Hit Ratio                 | Indicates the ratio of which row data requests could be served from the cache.                                | High Low         |
| Database | Replication Status                  | Indicates database server replication status.   | Broken Failed Up |
|          | Server Transaction Rate             | Indicates the rate of transactions for the entire database server.  | High Normal      |
| Oracle   | Shared Pool Memory                  | Indicates the performance of an Oracle database instance as affected by the free space in shared pool memory. | Low Normal       |
|          | SQL Disk ReadWrite Rate             | Indicates SQL statement with high disk read-write per execution.  | High Normal      |
| Database | SQL Query Performance               | Indicates SQL statements with high elapsed time per execution.  | Low Normal       |



| CI Type | HI                             | Description   | Value                         |
|---------|--------------------------------|---|-------------------------------|
| Oracle  | Streams Apply Status           | Indicates the performance of an Oracle instance affected by apply processes having errors in an Oracle streams environment.       | Disabled<br>Aborted<br>Normal |
|         | Streams Capture Status         | Indicates the performance of an Oracle instance affected by capture processes having errors in an oracle streams environment.     | Disabled<br>Aborted<br>Normal |
|         | Streams Propagation Status     | Indicates the performance of an Oracle instance affected by propagation processes having errors in an Oracle streams environment. | Disabled<br>Aborted<br>Normal |
|         | Tablespace Temp Segment Usage  | Indicates the high use of temporary segments that are allocated to tablespaces in an Oracle database instance.                    | High<br>Normal                |
|         | Tablespaces Availability       | Indicates the availability of DB Tablespaces in a Oracle database instance.   | Online<br>Offline             |
|         | Tablespace Physical Read Ratio | Indicates the ratio of block to physical reads of tablespaces in an Oracle database instance.                                     | High<br>Normal                |
|         | Tablespace Usage Level         | Indicates the usage of tablespaces in an Oracle database instance.  | High<br>Moderate<br>Normal    |
|         | Wait Locked Sessions           | Indicates the performance of an Oracle database instance as affected by the number of sessions held by locks.                     | High<br>Normal                |
|         | Waits On Redo Log Space        | Indicates the performance of an Oracle database Instance as affected by the number of waits for redo log space.                   | High<br>Normal                |

## Topology Based Event Correlation (TBEC) Rules

The OMi MP for Oracle Database includes the following rules to correlate Oracle-related events:

For more information on how the correlation rules work, see the *HPE Operations Manager i Concepts Guide*.

### How to Access the Correlation Rules

- Open Correlation Rules pane:
  - On BSM 9.2x, click **Admin > Operations Management > Event Correlation > Topology-Based Event Correlation**.
  - On OMi 10.x, click **Administration > Event Processing > Correlation > Topology-Based Event Correlation**.

**Database::FileSystem:Disk Usage Level >> Oracle Device Usage Level HIs**

|  |  |                      |
|--|--|----------------------|
| <b>Description: Filesystem usage level impacts Oracle Space Usage (Background, User and Core dump device free space)</b> |  |                      |
| Cause  |  |                      |
| CIT: File system   | ETI: Disk Usage Level                          | Value: Near Capacity |
| Symptom 1  |  |                      |
| CIT: Oracle  | ETI: Oracle Background Dump Device Usage Level | Value: High          |
| Symptom 2  |  |                      |
| CIT: Oracle  | ETI: Oracle Core Dump Device Usage Level       | Value: High          |
| Symptom 3  |  |                      |
| CIT: Oracle  | ETI: Oracle User Dump Device Usage Level       | Value: High          |

**Database::Computer:Memory Usage Level >> Oracle Performance HIs**

|   |                                  |  |
|---|----------------------------------|--|
| <b>Description: Memory Usage Impacts Oracle Performance</b> |                                  |  |
| Cause   |                                  |  |
| CIT: Computer   | ETI: Memory Usage Level          | Value: Near Capacity/Much Higher Than Normal |
| Symptom 1   |                                  |  |
| CIT: Oracle   | ETI: Dictionary Cache Miss Ratio | Value: High                                  |
| Symptom 2   |                                  |  |
| CIT: Oracle   | ETI: Library Cache Functioning   | Value: HighReload, LowGetHits, LowPinHits    |
| Symptom 3   |                                  |  |
| CIT: Oracle   | ETI: Memory Sort Rate            | Value: Low                                   |
| Symptom 4   |                                  |  |
| CIT: Oracle   | ETI: SQL Query Performance       | Value: Low                                   |

**Database::FileSystem: Oracle Tablespace Usage Level >> Disk Usage Level**

|   |                             |             |
|---|-----------------------------|-------------|
| <b>Description: Correlates High Disk Space Usage by Db Tablespace to Near Capacity Disk Usage Level of FileSystem</b> |                             |             |
| Cause   |                             |             |
| CIT: Oracle   | ETI: Tablespace Usage Level | Value: High |

|   |                       |                      |
|---|-----------------------|----------------------|
| <b>Description: Correlates High Disk Space Usage by Db Tablespace to Near Capacity Disk Usage Level of FileSystem</b> |                       |                      |
| Symptom   |                       |                      |
| CIT: File System  | ETI: Disk Usage Level | Value: Near Capacity |

**Database::FileSystem:Oracle Tablespace Temp Segment Usage Level >> Disk Usage Level**

|  |                                    |                      |
|--|------------------------------------|----------------------|
| <b>Description: Correlates High Disk Space Usage by Db Tablespace Temp Usage to Near Capacity Disk Usage Level of FileSystem</b> |                                    |                      |
| Cause  |                                    |                      |
| CIT: Oracle  | ETI: Tablespace Temp Segment Usage | Value: High          |
| Symptom  |                                    |                      |
| CIT: File System   | ETI: Disk Usage Level              | Value: Near Capacity |

**Database::Computer:Oracle CPU Usage by SQL >> CPU Load**

|  |                       |  |
|--|-----------------------|--|
| <b>Description: CPU usage by Oracle SQL query and Heavy SQL statements increase CPU Load on Computer</b> |                       |  |
| Cause  |                       |  |
| CIT: Oracle  | ETI: CPU Usage by SQL | Value: High  |
| Symptom  |                       |  |
| CIT: Computer  | ETI: CPU Load         | Value: Bottlenecked, Constrained, Busy, Overloaded |

**Database::Computer:Oracle Heavy SQL Statement >> CPU Load**

|   |                           |  |
|---|---------------------------|--|
| <b>Description: Oracle Heavy SQL statements increase CPU Load on Computer</b> |                           |  |
| Cause   |                           |  |
| CIT: Oracle   | ETI: Heavy SQL Statements | Value: High  |
| Symptom   |                           |  |
| CIT: Computer   | ETI: CPU Load             | Value: Bottlenecked, Constrained, Busy, Overloaded |

**Database::Computer:Node Status >> Oracle Database Server Status**

|   |  |  |
|---|--|--|
| <b>Description: Correlates Unavailability of node to that of Database</b> |  |  |
| Cause   |  |  |

|   |                             |                                       |
|---|-----------------------------|---------------------------------------|
| <b>Description: Correlates Unavailability of node to that of Database</b> |                             |                                       |
| CIT: Computer   | ETI: Node Status            | Value: Down, Unknown, Suspended, Hang |
| Symptom   |                             |                                       |
| CIT: Oracle   | ETI: Database Server Status | Value: Down                           |

**Database::Computer:Ping Availability >> Oracle Database Server Status**

|   |                             |                    |
|---|-----------------------------|--------------------|
| <b>Description: Correlates Unavailability of node to that of Database</b> |                             |                    |
| Cause   |                             |                    |
| CIT: Computer   | ETI: Ping Availability      | Value: Unavailable |
| Symptom   |                             |                    |
| CIT: Oracle   | ETI: Database Server Status | Value: Down        |

**Database::Interface:InterfaceCommunicationStatus >> Oracle Database Broken Jobs**

|  |                                     |                    |
|--|-------------------------------------|--------------------|
| <b>Description: Correlates Interface Communication Status of node to Oracle Database Broken Jobs</b> |                                     |                    |
| Cause  |                                     |                    |
| CIT: Interface   | ETI: Interface Communication Status | Value: Unavailable |
| Symptom  |                                     |                    |
| CIT: Oracle  | ETI: Replication Status             | Value: Broken      |

**Database::Interface:InterfaceCommunicationStatus >> Oracle Database Failed Jobs**

|  |                                     |                    |
|--|-------------------------------------|--------------------|
| <b>Description: Correlates Interface Communication Status of node to Oracle Database Failed Jobs</b> |                                     |                    |
| Cause  |                                     |                    |
| CIT: Interface   | ETI: Interface Communication Status | Value: Unavailable |
| Symptom  |                                     |                    |
| CIT: Oracle  | ETI: Replication Status             | Value: Failed      |

**Database::Interface:InterfaceCommunicationStatus >> Oracle Database Stream Propagation Error**

|   |  |  |
|---|--|--|
| <b>Description: Correlates Interface Communication Status of node to Oracle Database Stream Propagation Error</b> |  |  |
| Cause   |  |  |

|   |                                     |                    |
|---|-------------------------------------|--------------------|
| <b>Description: Correlates Interface Communication Status of node to Oracle Database Stream Propagation Error</b> |                                     |                    |
| CIT: Interface  | ETI: Interface Communication Status | Value: Unavailable |
| Symptom 1   |                                     |                    |
| CIT: Oracle   | ETI: Streams Propagation Status     | Value: Aborted     |
| Symptom 2   |                                     |                    |
| CIT: Oracle   | ETI: Streams Propagation Status     | Value: Disabled    |

**Database::Interface:InterfaceUtilization >> Oracle Database Replication Status**

|  |                                       |  |
|--|---------------------------------------|--|
| <b>Description: Correlates Interface Utilization of node to Oracle Database Replication and SQL Query Performance Health</b> |                                       |  |
| Cause  |                                       |  |
| CIT: Interface   | ETI: Interface Utilization            | Value: High, Higher Than Normal, Much Higher Than Normal |
| Symptom 1  |                                       |  |
| CIT: Oracle  | ETI: Replication Status               | Value: Broken, Failed                                    |
| Symptom 2  |                                       |  |
| CIT: Oracle  | ETI: Dispatcher Busy Ratio by Network | Value: High  |
| Symptom 3  |                                       |  |
| CIT: Oracle  | ETI: SQL Query Performance            | Value: Low   |

**Database::Interface:InterfaceUtilization >> Oracle Database SQL Query Performance**

|   |                            |                                     |
|---|----------------------------|-------------------------------------|
| <b>Description: Correlates Interface Utilization of node to Oracle Database SQL Query Performance</b> |                            |                                     |
| Cause   |                            |                                     |
| CIT: Interface  | ETI: Interface Utilization | Value: High Much Higher Than Normal |
| Symptom   |                            |                                     |
| CIT: Oracle   | ETI: SQL Query Performance | Value: Low                          |

**Generic::Computer:Memory Usage Level>> Database Performance HIs**

|   |  |  |
|---|--|--|
| <b>Description: Memory Usage impacts Database Performance</b> |  |  |
| Cause   |  |  |

|   |                            |  |
|---|----------------------------|--|
| <b>Description: Memory Usage impacts Database Performance</b> |                            |  |
| CIT: Computer   | ETI: Memory Usage Level    | Value: Critical,<br>Higher Than Normal,<br>Much Higher Than Normal,<br>Near Capacity |
| Symptom   |                            |  |
| CIT: Database   | ETI: SQL Query Performance | Value: Low   |

**Generic::Interface:InterfaceCommunicationStatus >> Database Job Status**

|  |                                     |                          |
|--|-------------------------------------|--------------------------|
| <b>Description: Correlates Interface Communication Status of node to Database Job Status</b> |                                     |                          |
| Cause  |                                     |                          |
| CIT: Interface   | ETI: Interface Communication Status | Value: Unavailable       |
| Symptom  |                                     |                          |
| CIT: Database  | ETI: Replication Status             | Value: Failed,<br>Broken |

**Generic::Interface:InterfaceUtilization >> Database Replication and Query Performance Status**

|   |                            |  |
|---|----------------------------|--|
| <b>Description: Correlates Interface Utilization of node to Database Replication and Query Performance Health</b> |                            |  |
| Cause   |                            |  |
| CIT: Interface  | ETI: Interface Utilization | Value: High,<br>Much Higher Than Normal,<br>Higher Than Normal |
| Symptom 1   |                            |  |
| CIT: Database   | ETI: SQL Query Performance | Value: Low   |
| Symptom 2   |                            |  |
| CIT: Database   | ETI: Replication Status    | Value: Broken,<br>Failed                                       |

**Generic::Node:Node Status >> Database Server Status**

|   |                  |  |
|---|------------------|--|
| <b>Description: Correlates unavailability of node to that of Database</b> |                  |  |
| Cause   |                  |  |
| CIT: Node   | ETI: Node Status | Value: Unknown,<br>Suspended,<br>Hang,<br>Down,<br>Maintenance |

|   |                             |             |
|---|-----------------------------|-------------|
| <b>Description: Correlates unavailability of node to that of Database</b> |                             |             |
| Symptom   |                             |             |
| CIT: Database   | ETI: Database Server Status | Value: Down |

**Generic::Node:Ping Availability >> Database Server Status**

|  |                             |                    |
|--|-----------------------------|--------------------|
| <b>Description: Correlates ping unavailability of node to that of Database</b> |                             |                    |
| Cause  |                             |                    |
| CIT: Node  | ETI: Ping Availability      | Value: Unavailable |
| Symptom  |                             |                    |
| CIT: Database  | ETI: Database Server Status | Value: Down        |

## Operations Orchestration (OO) Flows

HP Operations Orchestration provides OO flows that enable IT process automation and run book automation. For more information, see the *Operations Orchestration* documentation. The following section provides information about using OO flows for OMi MP for Oracle Database.

When creating the mapping for the Operations Orchestration (OO) flows, you can set default values for the attributes listed in the following table. You need not specify these values each time you run the flows.

| Attribute        | Description  |
|------------------|--|
| omServerPort     | Port number of the HPOM Tool WS.                                     |
| omServerUser     | User name for the HPOM Server that will be used in the HPOM Tool WS. |
| omServerPassword | Password for the HPOM Server that will be used in the HPOM Tool WS.  |

**How to upload OO flows**

To upload OO Flows from OMi MP for Oracle Database, follow these steps:

- In BSM or OMi, go to the directory:  
<HPBSM\_Root\_Directory>/conf/opr/oo
- Copy the required OO JAR file to a temporary location on a system where HP OO Studio (version 07.51.02 or greater) is installed.  
The file names can be one of the following:  
HPOprOO<content\_name>.jar  
For HP OO Studio version 09.00:
  - HPOprOOOra90.jar for Oracle
 For HP OO Studio version 07.51.02 to 07.60:
  - HPOprOOOra.jar for Oracle

To install and upload the OO flows run the command:

```
java -jar -Xmx1024m "<temp>/HP0pr00<content_name>" -centralPassword
<centralpassword>
```

For example:

```
java -jar -Xmx1024m "<temp>/HP0pr000ra90" -centralPassword <centralpassword>
```

**Note:** If the admin user in HP OO is not the default user, another parameter is required. For further details about installing content and the options available, see the *HP Operations Orchestration Software Development Kit Guide*.

Using HP OO Studio, the uploaded OO flows can be accessed under:

**../Library/Operations Management/..**

- From OMi, complete the mapping of OO flows to CIs and map the OO flow input variables to CI attributes using:

On BSM 9.2x, click **Admin > Integration > Operations Orchestration**.

On OMi 10.x, click **Administration > Operations Console > Run Books Mapping**.

The following section lists the Oracle OO flows:

### Oracle Health Check

You can use this flow to check the health of an Oracle Server.

**Note:** You can run this flow only on an Oracle Server, which is monitored by HPOM Smart Plug-in for Oracle.

This flow checks the following:

- If the Oracle Server is available.
- If the Oracle Tablespace are online.
- If the Oracle Datafiles are online.

You must map this flow to the **Oracle CIT**.

The following table lists the user input items required to run this OO flow:

| Flow input | Description  |
|------------|--|
| omNode     | FQDN of the Oracle node. This must be a managed node for the HPOM Server and must be specified each time you run the OO flow.        |
| omServer   | FQDN of the HPOM Server. You can map this input to the Event attribute <b>Originating Server</b> .                                   |
| instance   | Name of the Oracle Instance.   |
| timeout    | Timeout value to be used when running the remote command on the node. This is an optional attribute and the default value is 100000. |

### Oracle Performance Check

You can use this flow to check the performance of an Oracle Server.

This flow checks the following:



- If the **Number of Physical Reads per Minute** for Oracle database instance is above the specified threshold.
- If the **Redo Log Buffer Space Request Count** for Oracle database instance is above the specified threshold.
- If the **Dictionary Cache Hit Percentage** for Oracle database instance is above the specified threshold.
- If the **Current Transactions Percentage** for Oracle database instance is above the specified threshold.
- If the **Number of Sessions Waiting for release of a Lock** for Oracle database instance is above the specified threshold.

**Note:** You can run this flow only on an Oracle Server, which is monitored by HP Operations Manager Smart Plug-in for Oracle.

You must map this flow to the **Oracle CIT**.

The following table lists the user input items required to run this OO flow:

| Flow input                         | Description  |
|------------------------------------|--|
| omNode                             | FQDN of the Oracle node. This must be a managed node for the HPOM Server and must be specified each time you run the OO flow.            |
| PhysReadsRate_Threshold            | Threshold value for <b>Number of Physical Reads per Minute</b> for Oracle database instance. This is an optional attribute.              |
| RedoLogSpaceWait_Threshold         | Threshold value for <b>Redo Log Buffer Space Request Count</b> for Oracle database instance. This is an optional attribute.              |
| DictionaryCacheMissRatio_Threshold | Threshold value for <b>Dictionary Cache Hit Percentage</b> for Oracle database instance. This is an optional attribute.                  |
| TransactionPct_Threshold           | Threshold value for <b>Current Transactions Percentage</b> for Oracle database instance. This is an optional attribute.                  |
| SessWaitLokCnt_Threshold           | Threshold value for <b>Number of Sessions Waiting for release of a Lock</b> for Oracle database instance. This is an optional attribute. |
| timeout                            | Timeout value to be used when running the remote command on the node. This is an optional attribute and the default value is 100000.     |
| instance                           | Name of the Oracle Instance.   |
| omServer                           | FQDN of the HPOM Server. You can map this input to the Event attribute <b>Originating Server</b> .                                       |

## Tools

The OMi MP for Oracle Database is packaged with tools which enable administering, monitoring, and troubleshooting the Oracle CIs. It comprises the following tools:

How to Access Tools

1. Open Tools pane:

On BSM 9.2x, click **Admin > Operations Management > Operations Console > Tools**.

On OMi 10.x, click **Administration > Operations Console > Tools**.

2. In the CI Type pane:

For Oracle CIs, click **Configuration Item > Infrastructure Element > Running Software > Database > Oracle**.

For Computer CIs, click **Administration > Operations Console > Tools > Configuration Item > Infrastructure Element > Node > Computer**.

| CI Type  | Tool                                    | Description  |
|----------|---|--|
| Computer | Display MP Error File (Oracle Database) | To view the contents of the OMi MP for Oracle Database error file.   |
|          | MP Data Capture Tool (Oracle Database)  | Collects error and log information that can be sent to HP Support for OMi MP for Oracle Database troubleshooting issues.       |
|          | Enable MP Monitoring (Oracle Database)  | Enables OMi MP for Oracle Database collection and alert notification.  |
|          | Disable MP Monitoring (Oracle Database) | Disables OMi MP for Oracle Database collection and alert notification.   |
|          | Verify MP Deployment (Oracle Database)  | Shows OMi MP for Oracle Database deployed files, versions, number of policies, defaults file, and performs a connection check. |
|          | Enable MP Trace (Oracle Database)       | Turns On OMi MP for Oracle Database tracing.   |
|          | Disable MP Trace (Oracle Database)      | Turns Off OMi MP for Oracle Database tracing.  |
| Oracle   | Archive Device Free Space               | Reports free space in archive location for Oracle database instance configured to OMi MP for Oracle Database.                  |
|          | Archive Log Write Rate                  | Average time in minutes between archive log writes of Oracle database instances configured to OMi MP for Oracle Database.      |
|          | Background Dump Device Usage Level      | Reports information about the background dump directory for Oracle database instance configured to OMi MP for Oracle Database. |
|          | Cached Tables                           | Tables cached for Oracle database instance configured to OMi MP for Oracle Database.   |

| CI Type | Tool                                | Description   |
|---------|-------------------------------------|---|
|         | Core Dump Device Usage Level        | Reports information about the core dump device usage level for Oracle database instance configured to OMi MP for Oracle Database.         |
| Oracle  | Oracle Database Connection Check    | Checks the connection of all the Oracle database instances configured to OMi MP for Oracle Database.                                      |
|         | Database Object Status              | Reports invalid objects and invalid PL/SQL or missing dependencies for Oracle database instance configured to OMi MP for Oracle Database. |
|         | Datafiles Status                    | Data files that are not online for Oracle database instance configured to OMi MP for Oracle Database.                                     |
|         | Disabled Constraints                | Reports disabled constraints for Oracle database instance configured to OMi MP for Oracle Database.                                       |
|         | Disabled Triggers                   | Reports disabled triggers for Oracle database instance configured to OMi MP for Oracle Database.  |
|         | Flash Recovery Area Usage Level     | Reports Flash Recovery Area (FRA) disc space utilization status for Oracle database instance configured to OMi MP for Oracle Database.    |
|         | Global Cache Block Status           | Reports information about blocks lost for instances configured to OMi MP for Oracle Database.   |
|         | Global Cache Blocks Timed Out Count | Reports global cache blocks timed out counts of instances.  |
|         | Oracle Product Manuals              | Starts a web browser and connects to the Oracle product manuals web site.   |
|         | Segments Near Max Extents           | Reports segments approaching max extents for Oracle database instance configured to OMi MP for Oracle Database.                           |
| Oracle  | Segments Not Extendable             | Reports segments that cannot extent for Oracle database instance configured to OMi MP for Oracle Database.                                |

| CI Type | Tool  | Description  |
|---------|---|--|
|         | Sessions Waiting For Lock                           | Reports sessions waiting for a lock for Oracle database instance configured to OMi MP for Oracle Database.                 |
|         | Shared Pool Memory                                  | Reports shared pool free memory for Oracle database instance configured to OMi MP for Oracle Database.                     |
|         | Shared Servers Waiting For Requests                 | Shared servers waiting for requests for Oracle database instance configured to OMi MP for Oracle Database.                 |
|         | SQL Statements CPU Time                             | SQL statements with high CPU time for execution for Oracle database instance configured to OMi MP for Oracle Database.     |
|         | SQL Statements Performing Full Table Scans          | SQL statements performing full table scan for Oracle database instance configured to OMi MP for Oracle Database.           |
|         | SQL Statements With High Buffer Gets Per Execution  | SQL Statements With High Buffer Gets Per Execution for Oracle database instance configured to OMi MP for Oracle Database.  |
|         | SQL Statements With High Disk Reads                 | SQL Statements With High Disk Reads Per Execution for Oracle database instance configured to OMi MP for Oracle Database.   |
|         | SQL Statements With High Elapsed Time Per Execution | SQL Statements With High Elapsed Time Per Execution for Oracle database instance configured to OMi MP for Oracle Database. |
|         | SQL Statements With High Execution Rate             | SQL Statements With High Execution Rate for Oracle database instance configured to OMi MP for Oracle Database.             |
|         | SQL Statements With High Fetches                    | SQL Statements With High Fetches for Oracle database instance configured to OMi MP for Oracle Database.                    |
|         | SQL Statements With Long Table Scans                | SQL Statements With Long Table Scans for Oracle database instance configured to OMi MP for Oracle Database.                |
| Oracle  | Tables And Indexes Unanalyzed                       | Reports % of tables and indexes that are unanalyzed for Oracle database instance configured to OMi MP for Oracle Database. |
|         | Tablespace Free Space                               | Reports free space for all tablespaces for Oracle database instance configured to OMi MP for Oracle Database.              |

| CI Type | Tool                         | Description   |
|---------|------------------------------|---|
|         | Tablespaces Fragmented       | Reports tablespaces that have fragmented free space for Oracle database instance configured to OMi MP for Oracle Database.    |
|         | Tablespaces With High Read   | Tablespaces with high ratio of block to physical reads for Oracle database instance configured to OMi MP for Oracle Database. |
|         | User Dump Device Usage Level | Reports information about the user dump directory for Oracle database instance configured to OMi MP for Oracle Database.      |
|         | Users Logons                 | Reports currently logged in users for Oracle database instance configured to OMi MP for Oracle Database.                      |

## Graph Templates

Graphs represent pictorial representation of metrics. The OMi MP for Oracle Database includes the Oracle graph family, which is mapped to the Oracle CIT. The graphs are generated from the **DBSPI\_ORA\_GRAPH** data source. For information about creating and viewing graphs, see the documents for *Performance Dashboard* available in documentation for the *Operations Manager i*.

The following table provides information about the format of generic data source:

| Graph Templates | Policy Name   | Policy Description                                     | Metric               |
|-----------------|---------------|--|----------------------|
| Archive Device  | OracleDB_0058 | Percentage of free space on archive device.            | E058_ARCHVFREESPCPCT |
| Archive Logs    | OracleDB_0056 | Number of archive logs in archive device.              | E056_ARCHVFREESPCCNT |
|                 | OracleDB_0057 | Average time of archive log writes.                    | E057_ARCHIVEFREQRATE |
| Calls           | OracleDB_0044 | Number of transactions.                                | E044_COMMITRATE      |
|                 | OracleDB_0049 | Rate of user calls.                                    | E049_USERCALLRATE    |
|                 | OracleDB_0050 | Ratio of recursive calls to user calls.                | E050_RCSVUSRCALRATIO |
|                 | OracleDB_0075 | Ratio of recursive calls to cumulative opened cursors. | E075_RCRSVCURSRRATIO |

| <b>Graph Templates</b> | <b>Policy Name</b> | <b>Policy Description</b>  | <b>Metric</b>         |
|------------------------|--------------------|--|-----------------------|
| Checkpoints            | OracleDB_0035      | Rate of background checkpoints completed.                              | E035_ BCKGNDCKPTRATE  |
|                        | OracleDB_0083      | Rate of DBWR checkpoints.  | E083_ DBWRCKPTRATE    |
| Dump Devices           | OracleDB_0062      | Percentage of space used on background dump device.                    | E062_ BKGRDUMPSPCEPCT |
|                        | OracleDB_0064      | Percentage of space used on user dump device.                          | E064_ USERDUMPSPACPCT |
|                        | OracleDB_0065      | Percentage of space used on core dump device.                          | E065_ COREDUMPSPACPCT |
|                        | OracleDB_0066      | Size in MB of alert log.   | E066_ ALERTLOGSIZE    |
| Initialization Limits  | OracleDB_0028      | Percentage of DML locks used to total configured.                      | E028_ LOCKSUSEDPCT    |
|                        | OracleDB_0031      | Number of users with percentage of open cursors to maximum configured. | E031_ OPENCRSRPCTCNT  |
|                        | OracleDB_0085      | Percentage of current transactions to configured.                      | E085_ TRANSACTIONPCT  |
|                        | OracleDB_0087      | Percentage of current processes to configured.                         | E087_ PROCESSPCT      |
|                        | OracleDB_0089      | Percentage of enqueues to configured.                                  | E089_ EnqueuePct      |
| Multi-threaded Server  | OracleDB_0090      | Percentage of busy (average) for all dispatchers.                      | E090_ DsptchrBusyPct  |
|                        | OracleDB_0091      | Number of clients currently connected to all dispatchers.              | E091_ NumDsptchrCInts |
|                        | OracleDB_0092      | Percentage of shared servers waiting for requests.                     | E092_ ShrSvrReqWtPct  |
|                        | OracleDB_0093      | Percentage of busy to max shared server processes.                     | E093_ SharedServerPct |
|                        | OracleDB_0094      | Current percentage of shared pool allocated to UGA.                    | E094_ SesUGAMemCurPct |
|                        | OracleDB_0095      | Maximum percentage of shared pool allocated to UGA.                    | E095_ SesUGAMemMaxPct |
|                        | OracleDB_0096      | Percentage of high water to max shared server processes.               | E096_ ShrdSrvHWMPct   |

| <b>Graph Templates</b> | <b>Policy Name</b> | <b>Policy Description</b>  | <b>Metric</b>        |
|------------------------|--------------------|--|----------------------|
| Parallel Query Option  | OracleDB_0070      | Percentage of parallel query servers busy.   | E070_PQSERVRSBUSYPCT |
|                        | OracleDB_0071      | Percentage of parallel query servers busy highwatermark.                                   | E071_PQSRVHIGHWTRPCT |
|                        | OracleDB_0074      | Rate of parallel queries initiated.  | E074_PQQUERYRATE     |
|                        | OracleDB_0076      | Percentage of full table scans using rowid range scans compared to total full table scans. | E076_PQRANGESCANPCT  |
| Rollbacks              | DBSPI-0068         | Number of rollback segment shrinks.  | E068_RBSgmtShmkCnt   |
|                        | OracleDB_0069      | Percentage of rollback segment wait.   | E069_RBSegWaitPctCnt |
| RollBacks Generated    | OracleDB_0054      | Rate of generated rollbacks.   | E054_RollbackRate    |
| Redo                   | OracleDB_0032      | Number of waits for redo log space.  | E032_REDOLGSPCREQCNT |
|                        | OracleDB_0033      | Percentage of redo allocation latch misses.  | E033_REDOALCLTCHPCT  |
|                        | OracleDB_0034      | Percentage of redo copy latch misses.  | E034_REDOCOPYLTCHPCT |
| Sessions               | OracleDB_0037      | Number of logons.  | E037_USERLOGONCNT    |
|                        | OracleDB_0082      | Maximum number of sessions from startup.   | E082_SESSHIGHWATRCNT |
| Sharedpool             | OracleDB_0022      | Total buffer cache hit percentage.   | E022_TOTBUFCACHITPCT |
|                        | OracleDB_0023      | Current buffer cache hit percentage.   | E023_CURBUFCACHITPCT |
|                        | OracleDB_0026      | Percentage of cache get misses to gets in dictionary cache.                                | E026_DICTCACHEHITPCT |
|                        | OracleDB_0027      | Percentage of library cache misses to executions.  | E027_LIBCACHRELODPCT |
|                        | OracleDB_0039      | Percentage of gethits to gets in dictionary cache.   | E039_LIBCACGETHITPCT |
| Sharedpool             | OracleDB_0040      | Percentage of pinhits to pins in dictionary cache.   | E040_LIBCACPINHITPCT |

| <b>Graph Templates</b> | <b>Policy Name</b> | <b>Policy Description</b>   | <b>Metric</b>        |
|------------------------|--------------------|---|----------------------|
|                        | OracleDB_0045      | Percentage of free pool memory.                                   | E045_SHRDPoolFreePct |
|                        | OracleDB_0059      | Percentage of cursors in cache parameter.                         | E059_CursorCachePct  |
| Sorts                  | OracleDB_0019      | Disk sort rate.   | E019_SortDiskRate    |
|                        | OracleDB_0052      | Rate of total sorts on disk and in memory.                        | E052_SortTotalRate   |
| Sorts Memory/Rows      | OracleDB_0020      | Percentage of memory sorts.                                       | E020_SortMemoryPct   |
|                        | OracleDB_0051      | Average number of rows per sort.                                  | E051_SortRowsAvgCnt  |
| Tablespace             | OracleDB_0006      | Number of tablespaces with low free space percentage.             | E006_TblSpFreePctCnt |
|                        | OracleDB_0007      | Number of tablespaces that are not online.                        | E007_TblSpStatusCnt  |
|                        | OracleDB_0008      | Number of tablespaces with high ratio of block to physical reads. | E008_TsBreadRatioCnt |
|                        | OracleDB_0009      | Number of tablespaces with high use of temp segments to total.    | E009_TstMPEXntpCnt   |
| Tablespace             | OracleDB_0011      | Number of fragmented tablespaces.                                 | E011_TblSpFrMntCnt   |
|                        | OracleDB_0016      | Number of segments that cannot extend.                            | E016_SegMntExtndCnt  |
|                        | OracleDB_0017      | Number of segments approaching max extent.                        | E017_SegMaxExtntCnt  |
|                        | OracleDB_0018      | Number of segments adding extents rapidly.                        | E018_SegExtrapidCnt  |
| Table Scan             | OracleDB_0030      | Rate at which full table scans (long tables) occur.               | E030_FullGtblScnRate |
|                        | OracleDB_0041      | Rate at which full table scans (short tables) occur.              | E041_FulShtBlScnRate |



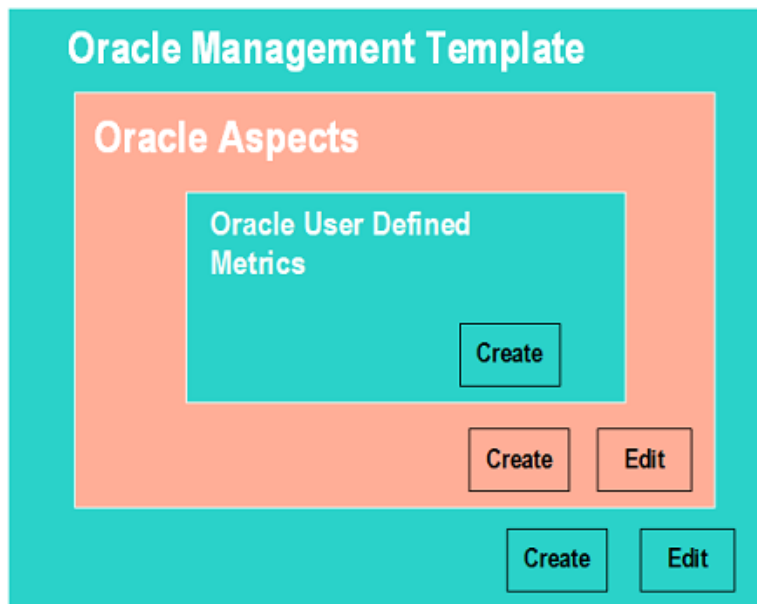
| <b>Graph Templates</b> | <b>Policy Name</b> | <b>Policy Description</b>  | <b>Metric</b>         |
|------------------------|--------------------|--|-----------------------|
| Tables and Indexes     | OracleDB_0042      | Percentage of the tables and indexes which were never analyzed.      | E042_UNLYZTBLINDXPCT  |
|                        | OracleDB_0046      | Percentage of the rows fetched by indFor example                     | E046_ROWFETCHBYIDXPCT |
|                        | OracleDB_0047      | Number of tables cached.   | E047_TABLESCACHEDCNT  |
|                        | OracleDB_0048      | Percentage of chained rows fetched.                                  | E048_CHANDROWFTCHPCT  |
| Waits                  | OracleDB_0021      | Percentage of buffer busy waits to logical reads.                    | E021_BUFFERBUSYPCT    |
|                        | OracleDB_0024      | Percentage of enqueue waits to enqueue requests.                     | E024_EQWAITSREQPCT    |
|                        | OracleDB_0038      | Number of latches with high contention ratio greater than threshold. | E038_LTCHOVRLIMITCNT  |
|                        | OracleDB_0043      | Percentage of enqueue timeouts to enqueue requests.                  | E043_EQTIMEOUTREQPCT  |
|                        | OracleDB_0029      | Number of sessions waiting for release of a lock.                    | E029_SESSWAITLCKCNT   |

# Chapter 4: Customizing OMi MP for Oracle Database

OMi MP for Oracle Database can be customized to suit your monitoring requirements. You can edit the existing Oracle Management Templates or create new Oracle Management Templates to monitor any database environment.

This section provides information about the following:

- ["Tuning the Components of OMi MP for Oracle Database"](#)
- ["Creating New Oracle Management Templates"](#)
- ["Creating New Oracle Aspect"](#)
- ["User Defined Metrics \(UDM\)"](#)



## Tuning the Components of OMi MP for Oracle Database

You can tune the following components:

- [Parameters](#)
- [Aspects](#)
- [Management Template](#)

## Tuning Parameters

You can modify the default value of parameters either before or after deploying the Oracle Management Templates or Aspects. You can edit parameter value during deployment using Management Templates & Aspects pane. You can provide customized parameter values after (Management Template or Aspects) deployment for each of the assignment using Assignments & Tuning pane.

Following is the list of parameters with the default values that you can edit.

| Parameters                       | Default Values  |
|----------------------------------|---|
| Frequency of Very High Scheduler | 5 mins  |
| Frequency of High Scheduler      | 15 mins   |
| Frequency of Medium Scheduler    | 30 mins   |
| Frequency of Low Scheduler       | 1 hour  |
| Frequency of daily Scheduler     | 24 hours  |
| Frequency                        | NA<br><br><b>Note:</b> When the value of Frequency parameter is set to <b>NORUN</b> , that particular Policy Template, Management Template, or Aspect will not be monitored for the duration the Frequency value is modified. |
| Threshold                        | NA  |
| Severity                         | NA  |

To modify the frequency of collection, corresponding Schedule Task policy must be modified. To modify the individual policy schedule, corresponding frequency parameters must be modified.

## Advanced Data Collection Filters

Filters are typically used to prevent unnecessary alerts or messages. For example, if you have a database which you would not want to monitor and generate alerts/messages. In such cases, you can use filters to exclude some data from being collected and, as a result, prevent the unwanted messages. You set up filters for Microsoft SQL Server by defining SQL WHERE clause fragments, part in the parameter during Management Template or Aspect deployment.

Following is the list of filter parameters that you can edit:

| Policy        | Filter Parameter Label         | Parameter Description and Example  |
|---------------|--------------------------------|--|
| OracleDB_0003 | Tablespace Free Extents Filter | Filter tablespaces with low free extents. Mention SQL Query to skip. For example: Tablespace_name NOT IN ('system'). |

| <b>Policy</b> | <b>Filter Parameter Label</b>              | <b>Parameter Description and Example</b>  |
|---------------|--|---|
| OracleDB_0004 | Users Default on System Filter             | Filter Users having their default Tablespace as SYSTEM. Mention SQL Query to skip. For example.: Username NOT IN ('Guy','Debbie', 'Barry').   |
| OracleDB_0005 | Foreign Objects on System Filter           | Filter Users having their objects on SYSTEM Tablespace. Mention SQL Query to skip. For example.: Owner NOT IN ('Guy','Debbie', 'Barry').  |
| OracleDB_0006 | Tablespaces with Low Free Space Filter     | Filter tablespaces with low percentage of free space. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'. |
| OracleDB_0007 | Tablespace Status Filter                   | Filter tablespaces with status offline. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'.               |
| OracleDB_0008 | Tablespace Read Ratio Count Filter         | Filter tablespaces for read ratio. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'.                    |
| OracleDB_0009 | Tablespace with Temp Segments Count Filter | Filter tablespaces for temp segments percentage. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'.      |
| OracleDB_0011 | Fragmented Tablespaces Count Filter        | Filter tablespaces for fragmentation. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'.                 |
| OracleDB_0016 | Segments Extension Status Filter           | Filter Segments which can not extend. Mention the SQL Query to skip. For example: Segment_name like 'SAP%'.   |

| Policy        | Filter Parameter Label                                  | Parameter Description and Example   |
|---------------|---|---|
| OracleDB_0017 | Segments Approaching Max Extents Filter                 | Filter Segments which are approaching max extents. Mention the SQL Query to skip. For example: Owner NOT IN ('WAREHOUSE') and Segment_name like 'SAP%'.   |
| OracleDB_0018 | Segment Growth Filter                                   | Filter Segments which grows rapidly. Mention the SQL Query to skip. For example: Segment_name like 'SAP%'.  |
| OracleDB_0029 | Session Wait For Lock Filter                            | Filter to specify session lock duration. Mention the duration constraint. For example: (SECONDS_IN_WAIT - WAIT_TIME / 100) > 120.   |
| OracleDB_0042 | Unanalyzed Tables Indexes Filter                        | Filter tables and indexes which are never analyzed. For example: "TABLE_NAME_A','TABLE_NAME_B" or "INDEX_NAME_A','INDEX_NAME_B".  |
| OracleDB_0203 | Tablespace Free Extents Filter                          | Filter tablespaces with low free extents. Mention SQL Query to skip. Ex: Tablespace_name NOT IN ('system').   |
| OracleDB_0206 | Tablespaces with Low Free Space Filter                  | Filter tablespaces with low percentage of free space. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'.     |
| OracleDB_0215 | Segment Size(Only Logging) Filter                       | Filter segments for logging their sizes. Mention the SQL Query to skip. For example: Segment_name like 'SAP%'.  |
| OracleDB_0216 | Segments Extension Status Filter (Based on Tablespaces) | Filter Segments which can not extend based on Tablespace. Mention the SQL Query to skip. For example: Tablespace_name NOT LIKE 'SAP1001%' and tablespace_name NOT BETWEEN 'TS001' and 'TS0101'. |
| OracleDB_0217 | Segments Approaching Max Extents Filter                 | Filter Segments which are approaching max extents. Mention the SQL Query to skip. For example: Owner NOT IN ('WAREHOUSE') and Segment_name like 'SAP%'.   |
| OracleDB_0218 | Segment GrowthFilter(Drill Down)                        | Filter Segments which grows rapidly(Drill Down). Mention the SQL Query to skip.   |

| Policy        | Filter Parameter Label                     | Parameter Description and Example  |
|---------------|--|--|
|               |  | For example: Segment_name like 'SAP%'.   |
| OracleDB_0334 | ASM Diskgroup Free Space Percentage Filter | Filter to skip ASM Diskgroup. Mention the ASM Diskgoup to skip. For example: NAME LIKE '%ASMDG1%'.   |
| OracleDB_0101 | SQL Query Filter                           | Filter to skip SQL statements from Query performance monitoring. Mention the SQL Query to skip. For example: username NOT IN ('SYSTEM', 'SYS') |
| OracleDB_0102 |  |  |
| OracleDB_0103 |  |  |
| OracleDB_0104 |  |  |
| OracleDB_0105 |  |  |
| OracleDB_0106 |  |  |
| OracleDB_0107 |  |  |
| OracleDB_0108 |  |  |
| OracleDB_0119 |  |  |
| OracleDB_0301 | SQL Query Filter                           | Filter to skip SQL statements from Query performance monitoring. Mention the SQL Query to skip. For example: username NOT IN ('SYSTEM', 'SYS') |
| OracleDB_0302 |  |  |
| OracleDB_0303 |  |  |
| OracleDB_0304 |  |  |
| OracleDB_0305 |  |  |
| OracleDB_0306 |  |  |
| OracleDB_0307 |  |  |
| OracleDB_0308 |  |  |

## Tuning Oracle Aspect

Based on the monitoring requirements, you can include or exclude policy template to the existing Oracle Aspect. For more information about each policy, see the section *OMi MP for Oracle Database -Reference Guide*.

## Oracle Roll-Up and Drill-Down Policies

The Oracle *roll-up* policies that monitors multiple instances of database objects. The Oracle drill-down policy monitors each instance of the database object. Roll-up policies send one message that could be relevant to multiple objects.

For example, when the *OracleDB\_0016* policy, generates a message (alert), it indicates that a database instance on the system has one or more segments that are unable to extend. The database instance name and segments details are provided in the message text as follows:

```
3 segments will not be able to extend in database Eurosales1.
```

Corresponding drill-down policy is *OracleDB\_0216*, which generates alert for each tablespace.




OMi MP for Oracle Database provides the following drill down policies:

| Aspect                            | Roll-up policy | Drill-down policy |
|-----------------------------------|----------------|-------------------|
| Basic Oracle Query Performance    | OracleDB_0106  | OracleDB_0306     |
|                                   | OracleDB_0107  | OracleDB_0307     |
|                                   | OracleDB_0108  | OracleDB_0308     |
| Basic Oracle Segment Space        | OracleDB_0016  | OracleDB_0216     |
| Basic Oracle Query Performance    | OracleDB_0101  | OracleDB_0301     |
|                                   | OracleDB_0102  | OracleDB_0302     |
|                                   | OracleDB_0103  | OracleDB_0303     |
|                                   | OracleDB_0104  | OracleDB_0304     |
|                                   | OracleDB_0105  | OracleDB_0305     |
| Oracle Query Performance (Add-on) | OracleDB_0106  | OracleDB_0306     |
|                                   | OracleDB_0107  | OracleDB_0307     |
|                                   | OracleDB_0108  | OracleDB_0308     |
| Basic Oracle Segment Space        | OracleDB_0016  | OracleDB_0216     |
| Oracle Segment Space (Add-on)     | OracleDB_0017  | OracleDB_0217     |
|                                   | OracleDB_0018  | OracleDB_0218     |
| Oracle Tablespace Health (Add-on) | OracleDB_0003  | OracleDB_0203     |
|                                   | OracleDB_0006  | OracleDB_0206     |

**Note:** It is recommended in a particular instance to monitor using either roll-up or drill-down policy. Do not include both roll-up and drill-up policies to monitor single instance of the database.

If you want to generate alert for each tablespace as described in the example, then perform the following:

- Open the Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
- In the Configuration Folders pane:  
**Configuration Folders > Database Management > Oracle > Oracle Aspects**

3. Select the **Basic Oracle Segment Space** from the list, and then click . The Edit Aspect dialog box opens.
4. Click the **Policy Templates** tab.
5. Select the **OracleDB\_0016** from the policies list and click .
6. Click  and select **Add Policy Templates From List**.
7. In the list of policies, select **OracleDB\_0216** policy and click **OK**.
8. In the Edit Aspect dialog box, click **OK**.

The version of the Oracle Management Template is incremented. Deploy the new version of the Aspect.

## Tuning Oracle Management Templates

You can edit the Oracle Management Templates and modify the following components:

- Parameters
- Oracle Aspects

### Editing Parameters

**Use Case:** You are using Essential Oracle Management Template to monitor single instance databases in your environment. You are monitoring the table spaces with low free space in the environment and want to modify the parameters corresponding to tablespaces to closely monitor the free space available.

To closely monitor tablespaces in your environment, you must modify the tablespace parameters - tablespaces with low free space frequency, tablespaces with low free space threshold, tablespaces with low free space severity.

1. Open the Management Templates & Aspects pane:
  - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.
  - On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:
  - Configuration Folders > Database Management > Oracle > Oracle Management Templates > Essential Oracle Management Template**
3. Select the **Essential Oracle Management Template** from the list, and then click . The Edit Management Template dialog box opens.
4. Click the **Parameters** tab. The list of parameters appear.
5. Double-click the **tablespace** parameter. The Edit Parameter window appears.
  - In this instance, tablespace parameter is tablespaces with low free space frequency, tablespaces with low free space threshold or tablespaces with low free space severity.
6. You can change the default value by using the drop down text. For example, you can change the value of the parameter tablespaces with low free space frequency to High from Medium.
7. Click **OK**. The Edit Management Template dialog box opens.
8. Click **OK**. The version of the Oracle Management Template is incremented.

**Note:** The version number of the Oracle Management Template is incremented when any





customizations are made to the Oracle Management Template.



## Including Additional Aspects

Essential and Extensive Oracle Management Template enable you to monitor basic areas of Lock Latches, Memory Performance, query performance, object faults, tablespace, and transactions. For in-depth monitoring of these features, you can add one or more Aspect as required to the existing Management Template. For more information about Aspects that are not available in the OOTB Management Templates, see the section [Oracle Aspects](#).

**Use Case:** You are monitor using Essential Oracle Management Template and require in-depth monitoring of transactions.

1. Open the Management Templates & Aspects pane:  
On BSM, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:  
**Configuration Folders > Database Management > Oracle > Oracle Management Templates > Essential Oracle Management Template**
3. Select the **Essential Oracle Management Template** from the list, and then click . The Edit Management Template dialog box opens.
4. Click the **Aspects** tab. The list of Aspects matching the Oracle CI type appear. You can deploy the Management Template only to this CI type.
5. In the Available Aspects list, select the Oracle Transactions (Add-on) Aspect and click .
6. Click **OK**. The version of the Oracle Management Template is incremented.





## Creating New Oracle Management Templates

1. Open the Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane:  
Click **Configuration Folders > Database Management > Oracle**
3. In the Management Templates & Aspects pane, select the new configuration folder and click  and then click  **Management Template**. The Create Management Template wizard opens.
4. In the **General** tab, type a **Name** for the new Oracle Management Template and click **Next**.
5. An Oracle Management Template enables you to manage Oracle CIs and all the related dependent CIs. Select the **ORA\_Deployment** from the list as the Topology View.
6. Click an item in the topology map to select the **Oracle** CI Type and click **Next**.
7. In the **Aspects** tab, add the **Oraspi\_Base** Aspects and click **Next**.
8. For each aspect that you add, you must select *Oracle* as **Target CI**.

9. In the **Parameters** tab, combine all the instances of **Oracle Instance Name**, **Oracle Instance User Name**, and **Oracle Instance Password** parameters.
10. In the Create Management Template wizard, click **Finish** to save the Management Template and close the wizard.

The new Management Template appears in the Management Templates & Aspects pane.

## Creating New Oracle Aspect

1. Open Management Templates & Aspects pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.  
On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.
2. In the Configuration Folders pane, click the configuration folder in which you want to create the new aspect. If you need to create a new configuration folder, click .
3. In the Management Templates & Aspects pane, click , and then click  **Aspect**. The Create Aspect wizard opens.
4. In the **General** tab, type a unique **Name** for the new aspect and click **Next**.
5. In the **CI Types** tab, select the **Oracle** CI Type to which this aspect will be assigned.  
Click **Next**.
6. In the **Instrumentation** tab, add **Oracle\_Monitoring\_MP** and **Database\_Monitoring\_MP** and click **Next**.
7. In the **Aspects** tab, add the **Oraspi\_Base** Aspect and click **Next**.
8. In the **Policy Templates** tab, click  **Add Policy Template** on BSM 9.2x or **Add Policy Template From List** on OMi 10.x. Select the policy templates that you want to add, and then click **OK**.  
You can add policies from the **Oracle Database MP** policy template group. For more information about each policy, see the *OMi MP for Oracle Database - Reference Guide*.
9. In the **Parameters** tab, you see a list of all the parameters from the policy templates that you added to this aspect.  
You can set either a specific default value, or you can click **From CI Attribute** and then browse for a CI attribute. For the **Oracle Instance Name** Parameter, select default value as *name*.
10. In the Create Aspect wizard, click **Finish** to save the aspect and close the wizard.

The new aspect appears in the Management Templates & Aspects pane.

## User Defined Metrics (UDM)

You can collect additional data from Oracle databases by creating User Defined Metrics (UDMs). By default, the UDMs are part of User Defined Aspects (UDA). The OMi MP for Oracle Database enables you to define additional metrics and mechanisms to collect these metric values with the help of SQL codes. The User Defined Aspect includes the following policies:

- OracleDB\_07XX - Measurement Threshold policy for monitoring UDM
- OracleDB\_UDM - Sample Config file policy template to create a UDM

## Understanding UDM

The OMi MP for Oracle Database provides you with a UDM configuration file. You can add SQL codes to the template to define new metrics and the mechanism to collect the metric data.

The template uses the following syntax to define metric name and metric data collection mechanism:

```
ORACLE
METRIC 07XX
COLLECT <OPTIONS> "<sqlcode>"
REPORT 1 "<sqlcode>"
METRIC 07YY
```

The following snippet of code defines the mechanism to collect the metric OracleDB\_07XX:

```
ORACLE
METRIC 07XX
COLLECT <OPTIONS> "<sqlcode>"
REPORT 1 "<sqlcode>"
```

Where:

- METRIC 07XX is the newly defined metric (you can type a metric name of your choice).
- COLLECT <OPTIONS> "<sqlcode>" is the syntax to define metric data collection mechanism from managed server nodes.
  - <OPTIONS> specifies the mechanism to log and represent the collected data.
  - "<sqlcode>" is the programming code written in SQL to collect metric data from database nodes. It can be a direct stand-alone SQL statement.
- REPORT 1 "<sqlcode>" is the syntax to define the mechanism to generate reports from the collected metric data.

The OMi MP for Oracle Database uses SQL utility to collect and report UDM data.

| Database | Metric COLLECT utility | Metric REPORT utility |
|----------|------------------------|-----------------------|
| Oracle   | Transact-SQL           | isql                  |

The SQL codes that you mention in this file are used by the collector/analyzer/script on Oracle database managed nodes to collect metric data. In the SQL code, you can use the following host variables to facilitate data collection process:

- :dbspi\_error
- :dbspi\_threshold
- :dbspi\_value


## Tasks



### How to Create User Defined Aspects

To create user defined metrics, follow these steps:

1. To define a new metric, you must create a copy of the measurement threshold template OracleDB\_07XX.
  - a. Open the Policy Template pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates**.  
On OMi 10.x, click **Administration > Monitoring > Policy Templates**.
  - b. In the Policy Templates Groups pane:  
Click **Templates grouped by type > Measurement Threshold**.
  - c. In Policy Templates pane, click **OracleDB\_07XX**.
  - d. To create a copy of the **OracleDB\_07XX** policy
  - e. Rename the policy as **OracleDB\_0700** and click **OK**.

**Note:** You can rename the OracleDB\_07XX policy in the range from 0700 to 0797.

- f. To modify parameter names, description, and values, follow these steps:
  - i. In the Policy Template pane, select the **OracleDB\_0700** policy template and then click  .
 

**Note:** You must edit the policy in raw mode.
  - ii. Click **Policy Data > Policy Parameters**.
  - iii. In the **Policy Parameter** tab, select the parameter from the list and then click  . The Edit Parameter dialog box opens.
  - iv. Edit the parameter name (For example, modify **UDM Monitor Metric 27XX Severity** to **UDM Monitor Metric 2700 Severity**), description, and the values.
  - v. Click **OK**. The version of the policy template OracleDB\_2700 increments by 0.1.
2. Define the UDM metric in the OracleDB\_UDM policy.
  - a. Open the Policy Template pane:  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates**.  
On OMi 10.x, click **Administration > Monitoring > Policy Templates**.
  - b. In the Policy Templates Groups pane:  
Click **Templates grouped by type > ConfigFile Templates**
  - c. In the Policy Template pane, select **OracleDB\_UDM** policy.
  - d. In the **OracleDB\_UDM**, select 1.0 and then click  . Then click **Edit Policy Template (Raw Mode)**.
  - e. Click the **Policy Data** tab. It contains details about defining a user defined metric and a sample example of a user defined metric. You can edit the data and save the policy. The version number of the UDM policy is incremented by 0.1.
3. Include both **OracleDB\_0700** and latest version of **OracleDB\_UDM** policies and create a new Oracle User Defined Aspect.

For more information about creating new Oracle Aspect for aspect, see the section "[Creating New Oracle Aspect](#)".

You can also include Oracle UDA Aspect to existing Management Template. For more information about editing Management Template, see the section "[Tuning Oracle Management Templates](#)".


## Chapter 5: Troubleshooting

The following section provides information about troubleshooting scenarios:

### Licensing count is not updated

**Problem:** Licensing count is not updated on License Management

**Solution:** To resolve this problem, follow these steps:

1. After installing OMi MP for Oracle Database, ensure that the license is activated by following these steps:
  - a. Open License Management pane:
    - On BSM, click **Admin > Platform > Setup and Maintenance > License Management**.
    - On OMi, click **Administration > Setup and Maintenance > License Management**.
  - b. Click  and select the `license.dat` file. The license details appears in the License Management window.
    - The License Management provides details about the name, license type, days left, expiration date, capacity, and capacity details.
2. To check for the license usage on the managed node, run the following command on the managed node:
  - For Windows:** `ovodetect -t`
  - For UNIX (except AIX):** `/opt/OV/bin/ovodetect -t`
  - For AIX:** `/usr/lpp/OV/bin/ovodetect -t`

If the output of the preceding command is `mpinstance="1"` then Oracle databases are being monitored.  
If the output of the preceding command is `mpinstance="0"` then Oracle databases are not being monitored.
3. If the license is still not updated in **License Management**, restart agent on the managed node by running the following command:
  - For Windows:** `ovc -restart opcmsga`
  - For UNIX (except AIX):** `/opt/OV/bin/ovc -restart opcmsga`
  - For AIX:** `/usr/lpp/OV/bin/ovc -restart opcmsga`

### Oracle Instance does not appear in RTSM

**Problem:** Oracle instance does not sync in RTSM from node.

**Solution:** To resolve this problem, follow these steps:

1. Open the Infrastructure Settings pane:
  - On BSM, click **Admin > Platform > Setup and Maintenance > Infrastructure Settings**
  - On OMi, click **Administration > Setup and Maintenance > Infrastructure Settings**
2. In the Infrastructure Settings Manager, select **Applications** as **Operations Management**.

3. In the Operations Management - HPOM Topology Synchronization Settings, the packages for Topology Sync should contain the packages that are used for topology synchronization - **default;nodegroups;operations-agent;HPOprSys;HPOprOra**.
4. Make sure that the policies - **OracleDB\_Discovery** and **OracleDB\_DeepDiscovery** are deployed on the managed node for discovering Oracle instances by running the following command:
  - Windows:** `ovpolicy -l`
  - UNIX (except AIX):** `/opt/OV/bin/ovpolicy -l`
  - AIX:** `/usr/lpp/OV/bin/ovpolicy -l`
5. Check the Oracle discovery log file on the managed node:
  - UNIX:** `/tmp/oracle_disc.log`
  - Windows:** `%temp%\dbspi_disc_Oracle.log`
6. Run the following command to obtain the policy id of OracleDB\_Discovery:
  - `ovpolicy -polname "OracleDB_Discovery" -list -level1`
7. Verify whether the **OracleDB\_Discovery** policy files exist by checking entries in the `policyid.out` file:
  - UNIX:** `/var/opt/OV/tmp/agtrep/`
  - Windows:** `%OvDataDir%\tmp\agtrep\`
8. Run the following command to synchronize the Oracle instance information to the OMi server from the discovery output file `agtrep.xml`:
  - `ovagtrep -publish -all`
9. Make sure that the Oracle instance information is synchronized to the OMi MA server. Check the log files available at the following location:
  - Linux:** `/var/opt/OV/dbspi/log/trace`
  - Windows:** `C:\usr\OV\dbspi\log\trace`

## Management Templates and Aspects are not deployed to the managed nodes

**Problem:** Management Templates and Aspects are not deployed to the managed nodes.

**Solution:** To resolve this problem, follow these steps:

1. To check the deployment status:
  - On BSM, click **Admin > Operations Management > Monitoring > Deployment Jobs**
  - On OMi, click **Administration > Monitoring > Deployment Jobs**
2. To check the assignment status:
  - On BSM, click **Admin > Operations Management > Monitoring > Assignments & Tuning**
  - On OMi, click **Administration > Monitoring > Assignments & Tuning**
3. Check these OMi log files `opr-webapp.log` and `opr-configserver.log` at the following location:
  - On BSM < or = 9.25:
    - Linux:** `/opt/HP/BSM/log/EJBContainer`
    - Windows:** `%TOPAZ_HOME%\log\EJBContainer`

On BSM > or = 9.26 and OMi 10.x:

**Linux:** /opt/HP/BSM/log/jboss

**Windows:** %TOPAZ\_HOME%\log\jboss

## No data for Performance Manager i (PMi) Graphs

**Problem 1:** The information to create graphs is not available from OMi MP for Oracle Database

**Solution 1:** To resolve this problem, follow these steps:

1. Run the following command to check if the graph data sources are created:

```
ovcodutil -obj
```

Verify the list of datasources and ensure **DBSPI\_ORA\_GRAPH** is created.

2. If the data sources are not created, run the following command to create the data source:

```
dbspigre
```

3. The errors related to data source creation are logged in the Console of command prompt.

4. Make sure that the graph policies are deployed on the nodes and policies log data into the following files:

**UNIX:**

```
/var/opt/OV/dbspi/dsi/oracle/<SID>/<SID>.dat
```

**Windows:**

```
C:\usr\OV\dbspi\dsi\oracle\<SID>.dat
```

5. Ensure that the \*.fm files are deployed on the managed node. Missing \*.fm files or improper \*.fm files lead to NULL or zero data logged or populated into the data sources.

6. If the data is being logged into the .dat files in the required format, make sure that the **OracleDB\_Logger** policy (dbspimwc command) is deployed on the managed node. The **OracleDB\_Logger** policy reads the data from the .dat files and writes the data into the respective data source.

7. You can run the following command to verify if the data is being logged in the datasources.

```
ovcodutil -dumpds <datasource_name>
```

In this instance, data source is, **DBSPI\_ORA\_GRAPH**, **ORADB\_<hostname>\_<instance>**, etc.

**Problem 2:** In case you are reusing any of the old nodes with Operations Agent 11.x and PA DSI (Data Source Integration) and if data sources are already created, this impacts data logging.

**Solution 2:** To resolve this problem, follow these steps:

1. Go to the following location:

**UNIX:** /var/opt/OV/dbspi

**Windows:** C:\Usr\dbspi

2. Edit defaults file and add the following command:

```
DATALOGGING_NEWLOGIC ON
```

3. To clean up and delete the old data, run the follow commands:

- a. Clean the old data:

**UNIX:** /var/opt/OV/bin/instrumentation/dbspi\_mwclup

**Windows:** %OvDataDir%\bin\instrumentation\dbspimwi-cleanup

b. To restart data sources, run the command `ovc -restart coda`.

4. Create an empty file:

**UNIX:** /var/opt/OV/conf/dsi2ddf/nocoda.opt

**Windows:** %OvDataDir%\conf\dsi2ddf\nocoda.opt

5. For creating new CODA data sources and logging data for PMi, run the following commands:

`dbspigre`

**Problem 3:** If the managed node is monitored by Smart Plug-in for Oracle Database.

**Solution 3:** To resolve this problem, follow these steps:

1. You can backup the data of DBSPI\_ORA\_<data sources> to the HP Reporter or any other Reporting solution that you are using.

For example: Run the following command to backup the data of DBSPI\_ORA\_<data sources> on HP Reporter, `gathercoda -h <Oracle_hostname>`.

2. Uninstall the HP Operations Smart Plug-in for Oracle from the managed node.

For more information about uninstalling from managed node, see *HP Operations Smart Plug-in for Databases Installation and Configuration Guide*.

3. To remove the data sources, run the following command:

**Windows:** `dbspimwi -cleanup`

**UNIX:** `dbspi_mwclup`

## Unable to log data into Reporter data sources

**Problem:** OMi MP for Oracle Database is not logging data into Reporter data sources.

**Solution:** To resolve this problem, follow these steps:

1. Run the following command to check if the report data sources are created:

`ovcodutil -obj`

In this instance, data sources like **DBSPI\_ORA\_REPORT**, **ORAOSM\_<hostname>\_<instance>**, etc.

2. If the data sources are not created, run the following command to create the data source:

**Windows:** `dbspimwi -osm`

**UNIX:** `dbspi_mw_int -osm`

3. The errors related to data source creation are logged in the console of command prompt.

4. Ensure that the report policies are deployed on the nodes. Data for reports is logged by the report policies directly into the data sources.

## Oracle metric collection fails

**Problem:** Oracle metric collection fails

**Solution:** You can identify this problem by following these steps:



1. You can enable tracing for an Oracle Instance by changing the Oracle Instance Tracing parameter to **ON**. Oracle Instance Tracing parameter is an Expert parameter. To show expert parameters, click **Show Expert Parameters**.

Select the View and then the corresponding instance and parameters and change the Oracle Instance Tracing parameter to ON.

or

2. Run the **Enable MP Trace (Oracle Database)** tool to enable tracing for all instances on the node.

The instrumentation log files are available at the following locations:

**UNIX:**

`/var/opt/OV/dbspi/log/trace`

`/var/opt/OV/App_Monitoring/Oracle/log/*`

**Windows:**

`C:\usr\OV\dbspi\log\trace`

`%OvDataDir%\App_Monitoring\Oracle\log\*`

## Server scheduling metrics fails to execute after deploying

**Problem:** Oracle scheduling metrics are not executing after deployment.

**Solution:** To resolve this problem, follow these steps:




1. Ensure the below four policies are deployed on the managed node by following these steps:
  - a. On BSM , click **Admin > Operations Management > Policy Templates** and on OMi, click **Administration > Monitoring > Policy Templates**.
  - b. In Policy Template Groups pane, click **Scheduler Task Templates**.
  - c. Check if the policies - **OracleDB\_High**, **OracleDB\_Low**, **OracleDB\_Medium** and **OracleDB\_Veryhigh** are deployed.
2. Navigate to the following location, to check if the respective policy files are valid:
  - **Windows:** `%OvDataDir%\App_Monitoring\Oracle\xml\`
  - **UNIX:** `/var/opt/OV/App_Monitoring/Oracle/xml/`
3. The scheduler xml files are created using the instrumentation file: `SpiConfHandler.pl`  
Instrumentation file is available at the following location:
  - **Windows:** `%OvDataDir%\bin\instrumentation\`
  - **UNIX:** `/var/opt/OV/bin/instrumentation/`
4. To enable tracing, run the **Enable MP Trace (Oracle Database)** tool.
5. The scheduler log file is created at the following path, after enabling the tracing.
  - **Windows:** `%OvDataDir%\App_Monitoring\Oracle\log\SpiConfHandler.pl.log`
  - **UNIX:** `/var/opt/OV/App_Monitoring/Oracle/log/SpiConfHandler.pl.log`

6. If you do not want to run any metric, the "NORUN" value can be selected in the Frequency parameter. For more information about editing the parameter value, see the section ["Tuning Parameters"](#).

## Collection failure does not generate alerts on the Server

**Problem:** Whenever collector encounters an error, no alerts are generated on the Server.

**Solution:** To resolve this problem, follow these steps:

1. Enable tracing by following one of below methods:
  - a. Tracing can be enabled through Assignment & Tuning pane by following steps:
    - i. On BSM, click **Admin > Operations Management > Monitoring > Assignments & Tuning** and on OMi, click **Administration > Monitoring > Assignments & Tuning**.
    - ii. In the Browse Views pane, select **Oracle\_Database\_Deployment**. Select the CI with the problem.
    - iii. In the Assignment Item pane, select the **Oraspi Base** Aspect.
    - iv. In the Assignment Details pane, click  to view the expert parameters.
    - v. Double-click the **Oracle Instance Tracing** parameter. The Edit Instance Parameter wizard opens.
    - vi. Click  and then select **Oracle Instance Tracing** parameter and select . Change the value to **ON** and click **OK**.
    - vii. Click **OK**.
  - b. To enable tracing on all instances on the node, follow these steps:
    - i. Click **Workspaces > Operations Console > Event Perspective**.
    - ii. From the **View Explorer**, select a view and then select an event from the Event Browser. You can view the tools in the Action pane.
    - iii. Double-click **Enable MP Trace (Oracle Database)** tool. The Preview Tool Execution wizard opens.

**Note:** Retain the optional parameter blank.

- iv. Click **Run Tool**.
2. Navigate to the below location and ensure appropriate instrumentation files are deployed on the node.
 

**Windows:** %OvDataDir%\bin\instrumentation

**UNIX:** /var/opt/OV/bin/instrumentation
3. The dbspicao is the collector which is used to get the Oracle metrics.
  - a. To check the connection of the collector, run the command `dbspicao -dpv`.
  - b. To verify if the threshold value has exceeded the limit, run the command `dbspicao -pv -m <metric>`.  
The metric values is printed on the Command Console.
4. If the threshold value has exceeded the limit, run the following command to generate Alarms:

```
dbspicao -m <metric> -i <Instance name>
```

-m = (metric) Specifies the metric numbers or number ranges on which to collect data.

-i = (instance) Specifies the database instance (optional)

- Instrumentation log files for tracing are available at the following location:

**UNIX:**

```
/var/opt/OV/dbspi/log/trace
```

```
/var/opt/OV/App_Monitoring/Oracle/log/*
```

**Windows:**

```
C:\usr\OV\dbspi\log\trace
```

```
%OvDataDir%\App_Monitoring\Oracle\log\*
```

## No Instruction Text in Schedule Task Policy

**Problem:** The schedule metric collection fails and the *Instructions* tab is empty:

- The instrumentation file (`CollMgr.bat` or `CollMgr.sh`) is not present in the following location:

**Windows:** %ovdatadir%/bin/instrumentation/

**UNIX:** /var/opt/OV/bin/instrumentation/

- Agent user might not have permission to run the binary.
- The system where Agent is installed might have low memory.

**Solution:**

- If the instrumentation file (`CollMgr.bat` or `CollMgr.sh`) is not available in the folder, redeploy the Management Template or Aspect to populate the instrumentation folder.
- Ensure that the Agent user has the permission to run the instrumentation file (`CollMgr.bat` or `CollMgr.sh`).
- Increase physical memory on the Agent installed system.

## Error while creating user for Oracle Database

**Problem:** You might encounter the following error while creating user using `dbspiochr` in Oracle 10g

```
grant select on V_$FS_FAILOVER_STATS          to orampuser
```

```
*
```

```
ERROR at line 1:
```

```
ORA-00942: table or view does not exist
```

```
Disconnected from Oracle Database 10g Enterprise Edition Release 10.2.0.1.0 - 64bit
Production
```

```
With the Partitioning, OLAP and Data Mining options
```

**Solution:** OMi MP for Oracle Database supports user creation for Oracle version higher to 10g.

# Appendix: Data Sources for Logging

The metric data is logged into specific data sources for generating graphs and reports.

## Generic Data Source

The generic data source reserves a column for the database instance name, labeled instance name. This column also contains the information that differentiates the data collected for each instance. Other column represents the graphing metrics. The following table is a sample of the Data source Table. The complete list of all the graphing metrics is stored in the **dbspiorag.fm** file located at:

**Windows:** <ovagentdir>\bin\instrumentation

**Linux:** /var/opt/OV/bin/instrumentation

## Format of Generic Data Source

The following table provides information about the format of generic data source.

| INSTANCE NAME | E001_DbInstanceStat | ...     |
|---------------|---------------------|---------|
| <value>       | <value>             | <value> |
| <value>       | <value>             | <value> |

## Reports

The web based reports enable you to check the health and efficiency of specific Oracle databases. The reports are generated from the **DBSPI\_ORA\_REPORT** data source. The following table provides information about the Oracle Reports that are available. For information about viewing and accessing reports, see the documentation for *HP Service Health Reporter (SHR)* .

The **DBSPI\_ORA\_REPORT** contains information about the following columns:

- Instance Name
- Metric ID
- Value ID
- System ID
- Object ID

The following table provides information about the **DBSPI\_ORA\_REPORT** data source:

|                      |              |        |
|----------------------|--------------|--------|
| 01/09/14 05:25:03 PM | INSTANCENAME | onehp  |
| 01/09/14 05:25:03 PM | METRICID     | 201.00 |
| 01/09/14 05:25:03 PM | VALUEID      | 1.00   |

|                      |          |              |
|----------------------|----------|--------------|
| 01/09/14 05:25:03 PM | VALUE    | 5.00         |
| 01/09/14 05:25:03 PM | SYSTEMID | Machine Name |
| 01/09/14 05:25:03 PM | OBJECTID | onehp        |

# Appendix B: Permission and Grants

Following is the list of grants and privileges of Oracle user account for OMi MP for Oracle Database.

- grant select on DBA\_2PC\_NEIGHBORS
- grant select on DBA\_2PC\_PENDING
- grant select on DBA\_ANALYZE\_OBJECTS
- grant select on DBA\_AUDIT\_EXISTS
- grant select on DBA\_AUDIT\_OBJECT
- grant select on DBA\_AUDIT\_SESSION
- grant select on DBA\_AUDIT\_STATEMENT
- grant select on DBA\_AUDIT\_TRAIL
- grant select on DBA\_CATALOG
- grant select on DBA\_CLU\_COLUMNS
- grant select on DBA\_CLUSTER\_HASH\_EXPRESSIONS
- grant select on DBA\_CLUSTERS
- grant select on DBA\_COL\_COMMENTS
- grant select on DBA\_COL\_PRIVS
- grant select on DBA\_COLL\_TYPES
- grant select on DBA\_CONS\_COLUMNS
- grant select on DBA\_CONSTRAINTS
- grant select on DBA\_DATA\_FILES
- grant select on DBA\_DB\_LINKS
- grant select on DBA\_DEPENDENCIES
- grant select on DBA\_DIRECTORIES
- grant select on DBA\_ERRORS
- grant select on DBA\_EXP\_FILES
- grant select on DBA\_EXP\_OBJECTS
- grant select on DBA\_EXP\_VERSION
- grant select on DBA\_EXTENTS
- grant select on DBA\_FREE\_SPACE
- grant select on DBA\_FREE\_SPACE\_COALESCED
- grant select on DBA\_FREE\_SPACE\_COALESCED\_TMP1
- grant select on DBA\_FREE\_SPACE\_COALESCED\_TMP2
- grant select on DBA\_HISTOGRAMS
- grant select on DBA\_IND\_COLUMNS
- grant select on DBA\_IND\_PARTITIONS
- grant select on DBA\_INDEXES
- grant select on DBA\_JOBS

- grant select on DBA\_JOBS\_RUNNING
- grant select on DBA\_LIBRARIES
- grant select on DBA\_LOBS
- grant select on DBA\_METHOD\_PARAMS
- grant select on DBA\_METHOD\_RESULTS
- grant select on DBA\_NESTED\_TABLES
- grant select on DBA\_OBJ\_AUDIT\_OPTS
- grant select on DBA\_OBJECT\_SIZE
- grant select on DBA\_OBJECT\_TABLES
- grant select on DBA\_OBJECTS
- grant select on DBA\_PART\_COL\_STATISTICS
- grant select on DBA\_PART\_HISTOGRAMS
- grant select on DBA\_PART\_INDEXES
- grant select on DBA\_PART\_KEY\_COLUMNS
- grant select on DBA\_PART\_TABLES
- grant select on DBA\_PENDING\_TRANSACTIONS
- grant select on DBA\_PRIV\_AUDIT\_OPTS
- grant select on DBA\_PROFILES
- grant select on DBA\_QUEUE\_SCHEDULES
- grant select on DBA\_QUEUE\_TABLES
- grant select on DBA\_QUEUES
- grant select on DBA\_RCHILD
- grant select on DBA\_REFRESH
- grant select on DBA\_REFRESH\_CHILDREN
- grant select on DBA\_REFS
- grant select on DBA\_REGISTERED\_SNAPSHOTS
- grant select on DBA\_REPCATLOG
- grant select on DBA\_RESUMABLE
- grant select on DBA\_RGROUP
- grant select on DBA\_ROLE\_PRIVS
- grant select on DBA\_ROLES
- grant select on DBA\_ROLLBACK\_SEGS
- grant select on DBA\_SEGMENTS
- grant select on DBA\_SEQUENCES
- grant select on DBA\_SNAPSHOT\_LOG\_FILTER\_COLS
- grant select on DBA\_SNAPSHOT\_LOGS
- grant select on DBA\_SNAPSHOT\_REFRESH\_TIMES
- grant select on DBA\_SNAPSHOTS
- grant select on DBA\_SOURCE

- grant select on DBA\_STMT\_AUDIT\_OPTS
- grant select on DBA\_SYNONYMS
- grant select on DBA\_SYS\_PRIVS
- grant select on DBA\_TAB\_COL\_STATISTICS
- grant select on DBA\_TAB\_COLUMNS
- grant select on DBA\_TAB\_COMMENTS
- grant select on DBA\_TAB\_HISTOGRAMS
- grant select on DBA\_TAB\_PARTITIONS
- grant select on DBA\_TAB\_PRIVS
- grant select on DBA\_TABLES
- grant select on DBA\_TABLESPACES
- grant select on DBA\_TRIGGER\_COLS
- grant select on DBA\_TRIGGERS
- grant select on DBA\_TS\_QUOTAS
- grant select on DBA\_TYPE\_ATTRS
- grant select on DBA\_TYPE\_METHODS
- grant select on DBA\_TYPES
- grant select on DBA\_UPDATABLE\_COLUMNS
- grant select on DBA\_USERS
- grant select on DBA\_VIEWS
- grant select on FILEEXT\$
- grant select on SYS.DEFTRAN
- grant select on SYS.DEFERROR
- grant select on SYS.FET\$
- grant select on SYS.FILE\$
- grant select on SYS.FILEXT\$
- grant select on SYS.OBJ\$
- grant select on SYS.SEG\$
- grant select on SYS.SYS\_DBA\_SEGS
- grant select on SYS.SYS\_OBJECTS
- grant select on SYS.TS\$
- grant select on SYS.UNDO\$
- grant execute on SYS.DBMS\_SPACE\_ADMIN
- grant select on V\_\$\_LOCK
- grant select on V\_\$ACCESS
- grant select on V\_\$ACTIVE\_INSTANCES
- grant select on V\_\$AQ1
- grant select on V\_\$ARCHIVE
- grant select on V\_\$ARCHIVE\_DEST



- grant select on V\_\$ARCHIVED\_LOG
- grant select on V\_\$BACKUP
- grant select on V\_\$BACKUP\_CORRUPTION
- grant select on V\_\$BACKUP\_DATAFILE
- grant select on V\_\$BACKUP\_DEVICE
- grant select on V\_\$BACKUP\_PIECE
- grant select on V\_\$BACKUP\_REDOLOG
- grant select on V\_\$BACKUP\_SET
- grant select on V\_\$BGPROCESS
- grant select on V\_\$BH
- grant select on V\_\$BUFFER\_POOL
- grant select on V\_\$CIRCUIT
- grant select on V\_\$CLASS\_PING
- grant select on V\_\$CONTROLFILE
- grant select on V\_\$CONTROLFILE\_RECORD\_SECTION
- grant select on V\_\$COPY\_CORRUPTION
- grant select on V\_\$DATABASE
- grant select on V\_\$DATAFILE
- grant select on V\_\$DATAFILE\_COPY
- grant select on V\_\$DATAFILE\_HEADER
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