



# OMi Management Pack for Oracle Database

Software Version: 1.10

Operations Manager i for Linux and Windows® operating systems

## Installation Guide

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# Chapter 1: Introduction

The OMi Management Pack for Oracle Database (OMi MP for Oracle Database) works with Operations Manager i (OMi) and enables you to monitor Oracle databases and the underlying infrastructure running in your environment using the Business Service Management (BSM). The OMi MP for Oracle Database includes the following components for monitoring the health and status of Oracle databases:

- Oracle Management Templates
- Oracle Aspects and Policy Templates
- Parameters
- Event Type Indicators (ETIs)
- Health Indicators (HIs)
- Topology based Event Correlation (TBEC) Rules
- Operations Orchestration (OO) Flows
- Tools
- Graph Templates

**Note:** For more information about the components, see the *OMi MP for Oracle Database Online Help or User Guide*.

## Abbreviations Used in this Manual

Abbreviations	Expansion
OMi	Operations Manager i
RTSM	Run-time Service Model
OMi MP	OMi Management Pack
OMi MP for Oracle Database	OMi Management Pack for Oracle Database

## Related Documentation

For more information about OMi MP for Oracle Database, see the following documents:

- OMi MP for Oracle Database - *Release Notes*
- OMi MP for Oracle Database - *User Guide*

## Licensing

The OMi MP licenses are available in a pack of 25 license units. Each license can be used per OS instance, irrespective of the application type. For example, the license pack can contain 5 licenses of OMi MP for Microsoft Skype for Business Server, 10 licenses of OMi MP for Oracle Database with any other combination of supported applications.

There are three types of licenses:

- Evaluation: A license with a fixed trial period of up to 60 days. This type of license is available only until a Time Based or Permanent license is purchased. Once purchased, the trial period immediately terminates.
- Term: A license that has a time-based expiration date.
- Perpetual: A license that does not expire.

To procure the license for the Entitlement Order Number (EON), go to <http://enterpriselicense.hpe.com> and log on using your HPE Passport credentials to redeem the license.

For information about applying the license, see "[Applying the License](#)".

## Chapter 2: Installing OMi MP for Oracle Database



This section provides information about installing OMi MP for Oracle Database on BSM 9.2x or OMi 10.x (Linux or Windows) servers.

### Installation Media

The following section provides information about the installation media for OMi MP for Oracle Database. The OMi MP for Oracle Database is available in the OMi MP for Oracle Database DVD (MPDVD) and also through electronic media (e-media). The MPDVD and e-media are available for English and Non-English locale environments. You can use the appropriate installation media based on your locale requirements.

The OMi MP for Oracle Database DVD and e-media contains the software and the product documentation. In a distributed environment, it must be installed on all BSM or OMi Data Processing Servers (DPS) and BSM or OMi Gateway Servers (GWS).

The following table provides information about the documentation available in the MPDVD and the e-media:

Document	Location	Purpose
Online Help	Available in the BSM console <b>Help</b> menu.  From the BSM console, go to <b>Help &gt; BSM Help &gt; Application Administration &gt; Operations Management &gt; OMi Management Pack for Oracle Database</b>  Available in the OMi console  menu.  From the OMi console, go to  <b>&gt; General Help &gt; Administration Guide &gt; Management Packs &gt; OMi Management Pack for Oracle Database.</b>	To provide information about the following: <ul style="list-style-type: none"><li>• Using Management Templates</li><li>• Using Aspects and Policy Templates</li><li>• Using Indicators - HIs, ETIs, and TBEC Rules</li></ul>
Installation Guide	<MPDVD>\DOCUMENTATION\en	
User Guide	<MPDVD>\DOCUMENTATION\en	
Release Notes	<MPDVD>\DOCUMENTATION\en	To provide information



Document	Location	Purpose
		about the following: <ul style="list-style-type: none"> <li>• Salient Features</li> <li>• Installation Notes</li> </ul>

## Installation Prerequisites

The following section lists the hardware and software prerequisites for installing OMi MP for Oracle Database on BSM 9.2x and OMi 10.x (Linux and Windows) Servers.

## Software Requirements

Before installing OMi MP for Oracle Database, the following components must be installed and configured on BSM 9.2x servers (Linux and Windows) and OMi 10.x servers (Linux and Windows).

Component	Version
BSM	9.23 or higher*
Operations Manager i	9.23 or higher*
Monitoring Automation	9.23 or higher*
OMi MP for Infrastructure	1.10
OMi MP for Oracle Database	1.10

**Note:** For large scale environments, it is recommended to use BSM 9.24 or higher.

### Managed Node

Component	Version
Operations Agent	11.12 or higher*

### SiteScope Server

Component	Version
SiteScope	11.22 or higher*



\* See the Support Matrix for latest versions supported.

**Note:** If you are deploying Hybrid Oracle Management Template, you need to install SiteScope 11.22 or higher version.

**Note:** For large scale environments, it is recommended to use BSM 9.24 or higher.

## Installation Checklist

Ensure that the installation tasks described in the following table are completed in the specified order to enable you to monitor OMi MP for Oracle Database.

If you have already installed OMi 10.x, skip to [Task 6](#).

### Server

Serial	Task	Reference
1	Check the Installation prerequisites for BSM	See the chapter <i>General Prerequisites</i> in the <i>BSM Installation Guide</i> .
2	Install BSM version 9.20 and the BSM 9.23 or higher Service Pack	See the following chapters in the <i>BSM Installation Guide</i> : <ul style="list-style-type: none"> <li>• <i>Install BSM 9.20</i></li> <li>• <i>Install the latest BSM 9.2x Minor Minor Release and Patch</i></li> </ul>
3	Install Monitoring Automation version 9.23 or higher	See the chapters <i>Installation Prerequisites</i> and <i>Installing and Configuring Monitoring Automation on BSM servers</i> in the <i>Monitoring Automation for Operations Manager i Installation Guide</i> .
4	Verify the Monitoring Automation installation	See the chapter <i>Verifying the Installation and Using Monitoring Automation</i> in the <i>Monitoring Automation for Operations Manager i Installation Guide</i> .
5	Install Additional BSM DPS update on BSM 9.23 <div> <b>Note:</b> If you are installation OMi MP for Oracle Database on BSM 9.23, you must install additional software update for </div>	See the section " <a href="#">Installing Additional Software Update for Monitoring Automation 9.23</a> ". This update is required only for BSM 9.23 and not for higher versions.

Serial	Task	Reference
	Monitoring Automation 9.23.	
6	Clean up OMi MP for Infrastructure version 1.00	If OMi MP for Infrastructure version 1.00 is already installed, see <i>Removing OMi MP for Infrastructure version 1.00</i> in the <i>OMi Management Pack for Infrastructure 1.10 Installation Guide</i> .
7	Install OMi MP for Infrastructure version 1.10	See the chapter <i>Installing OMi MP for Infrastructure 1.10</i> in the <i>OMi Management Pack for Infrastructure 1.10 Installation Guide</i> .
8	Migrate from OMi MP for Oracle Database version 1.00 to 1.10	If OMi MP for Oracle Database version 1.00 is already installed, see the section <a href="#">"Migrating from OMi MP for Oracle Database version 1.00 to version 1.10"</a> .
9	Install OMi MP for Oracle Database version 1.10	See the section <a href="#">"Installing OMi Management Pack for Oracle Database version 1.10 on BSM or OMi"</a> .
10	Applying the License	See the section <a href="#">"Applying the License"</a> .

### Managed Node

Task	Reference
Install Operations Agent 11.12	See the chapter <i>Installing Operations Agent 11.12</i> in the <i>Operations Agent and Operations Smart Plug-ins for Infrastructure Installation Guide</i> .

## Migrating from OMi MP for Oracle Database version 1.00 to version 1.10

Before installing OMi MP for Oracle Database version 1.10, OMi MP for Oracle Database version 1.00 must be removed. The following section provides information about removing OMi MP for Oracle Database version 1.00. These steps are required only for OMi MP for Oracle Database version 1.00 and will not be required for future versions.

To remove OMi MP for Oracle Database version 1.00, you must follow these tasks:


## Task 1: Remove the Assignments of Oracle Management Templates or Aspects

To remove the assignments of Oracle Management Templates or Aspects, follow these steps:

1. Open the Management Templates & Aspects pane:  
  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.  
  
On OMi 10.x, click **Administration > Monitoring Assignments & Tuning**.
2. In the **Browse Views** tab, select the **ORA\_Deployment** or View to see the CIs associated with the View.
3. Delete the Oracle Management Templates or Oracle Aspects assigned to each CI.

## Task 2: Remove the failed deployment jobs

If there are any failed deployment jobs, you must remove them by following these steps:

1. Open the Deployment Jobs pane:  
  
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Deployment Jobs**.  
  
On OMi 10.x, click **Administration > Monitoring > Deployment Jobs**.
2. Select the failed deployment job and click .

## Task 3: Remove references to Oracle Aspects

If Oracle Aspects are used by user-created Management Templates or Aspects, you can remove the references by editing the user-created Management Template or Aspects and remove the Infrastructure Aspects.

You can remove the Oracle Aspects that are nested into another Aspect, by editing the user created Aspect.

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 Management Templates & Aspects pane, edit the user created Management Templates or Oracle Aspects that are referenced.

## Task 4: Remove Oracle folder and sub folders

To remove the Oracle folder and sub folders, 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, click **Configuration Folders > Database Management > Oracle**.
3. Right-click and delete the Oracle folder.

**Note:** If deleting the Oracle folder results in any error then there are some assignments or references still existing. The following examples provide more information:

**Example 1:** If any of the OMi MP for Oracle Database Aspects or Management Templates are assigned to any CI, you will get the following error:

Cannot delete aspect version "Oracle Database Availability 1.0" (ID: d1239cd9-83c1-79a1-109d-7ec2fda557e6), as it is still assigned to CI "<name of the CI>" (ID: 337244a5137b2bfc8588508a9ea45ca9)

To remove the assignment of Oracle Aspects or Oracle Management Templates, go to ["Task 1: Remove the Assignments of Oracle Management Templates or Aspects"](#)

**Example 2:** If any of the OMi MP for Oracle Database Aspects are being referred in other Aspects or Management Templates, you will get the following error:

Cannot delete aspect version "Oracle Database Availability 1.0" (ID: d1239cd9-83c1-79a1-109d-7ec2fda557e6), as it belongs to management template version "XYZ 1.0" (ID: f21deb26-1ddf-8e6b-ecb4-ac331db4c963)

To remove the Oracle Aspect references, go to "[Task 3: Remove references to Oracle Aspects](#)"

**You must perform these steps till you delete the Oracle folder successfully.**

## Task 5: Run the Clean up script to remove the components of OMi MP for Oracle Database version 1.00

**Tip:** Ensure **Oracle** folder is deleted before proceeding with the below steps.

To clean up OMi MP for Oracle Database version 1.00, follow these steps:

**Note:** In a BSM 9.2x or OMi 10.x distributed environment, you must perform these steps on the BSM 9.2x or OMi 10.x DPS only.

1. Mount OMi MP for Oracle Database 1.10 DVD.
2. Go to <DVD folder>\cleanMP1.0
3. Run the following script to clean up the OMi MP for Oracle Database components:

**Linux:** `./cleanMP.sh OracleDB <BSMUsername> <BSMPassword>`

**Windows:** `cleanMP.bat OracleDB <BSMUsername> <BSMPassword>`

## Task 6: Verify the Clean up

To verify the clean up, follow these steps:

1. Open the Policy Templates pane:
  - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Policy Templates**.
  - On OMi 10.x, click **Administration > Monitoring > Policy Templates**.
  - In the Policy Template Groups pane, check the folders under **Templates grouped by Type**.
  - There should not be any policy templates with names starting with **DBSPI-** or **Oracle**.
2. Open the Content Packs pane:
  - On BSM 9.2x, click **Admin > Monitoring > Setup > Content Packs**.
  - On OMi 10.x, click **Administration > Setup and Maintenance > Content Packs**.

**OMi Management Pack for Oracle Database and Component for Database Management Packs** should not appear in the list.

## Installing Additional Software Update for Monitoring Automation 9.23

**Note:** You must install additional software update for Monitoring Automation 9.23 only for BSM 9.23.

Before installing OMi MP for Oracle , you must install an additional software update for Monitoring Automation 9.23. If you are using Monitoring Automation 9.24 or a later version, you do not need to install this additional software update. The additional software update for Monitoring Automation 9.23 (HPOprMA\_update.zip) is available in the e-media or MPDVD , under the folder HPOprMA\_update.

For more information about installing the update software, see ["Installing Monitoring Automation 9.23 Software Update"](#).

## Installing OMi MP for Infrastructure version 1.10

For information about installing OMi MP for Infrastructure version 1.10, see the chapter *Installing OMi MP for Infrastructure version 1.10 on BSM or OMi* in the *OMi Management Pack for Infrastructure Installation Guide*.

## Installing OMi Management Pack for Oracle Database version 1.10 on BSM or OMi

You can use the e-media or MPDVD to install the OMi MP for Oracle Database on BSM or OMi Server (Linux or Windows). The following section provides information about installing the OMi MP for Oracle Database on the BSM 9.2x or OMi 10.x Server.

**Note:** In a BSM 9.2x or OMi 10.x distributed environment, OMi MP for Oracle Database must be installed on all BSM or OMi Servers - BSM or OMi DPS and BSM or OMi GWS.

For BSM 9.2x, you must make sure that Monitoring Automation is running before proceeding with

the installation. To check the status, log on to BSM console and navigate to **Admin > Setup and Maintenance > Server Deployment** and then check if Monitoring Automation is enabled.

## On a Linux BSM 9.2x or OMi 10.x Server

To install the OMi MP for Oracle Database on a Linux BSM 9.2x or OMi 10.x Server, follow these steps:

1. Log on as a root user.
2. Set the umask by typing the command `umask 022`.
3. Create a directory to mount the DVD or e-media by typing the command `mkdir /<mount_point>`.

For example: `mkdir /dvdrom`

4. Insert the DVD into the disk drive or you can copy the e-media installation package and mount using the following commands:

For DVD: `mount /dev/<dvdrom_drive_name> /<mount_point>`

For e-media: `mount -o loop <e-media> /<mount_point>`

5. Change the directory to `/<mount_point>`.
6. Run the following command:

`<PATH>/mpinstall.sh -i`

Based on the locale, you can see the following table and run the command accordingly:

E-media	MP locale same as BSM locale	MP locale different from BSM locale
English e-media	<code>./mpinstall.sh -i</code>	<code>./mpinstall.sh -i</code>
Non-English e-media	<code>./mpinstall.sh -i</code>	<code>./mpinstall.sh -i -locale &lt;mplocale&gt;</code>

For example, to install OMi MP for Oracle Database in the Simplified Chinese locale with BSM in a non Simplified Chinese locale, specify the following command:

`./mpinstall.sh -i -locale zh_CN`

**Note:** You can use the following command options:

`./mpinstall.sh -i [-locale <MP Locale>] [-h|help]`



`-i` : Install Management Pack.

`-locale`: Locale specific Management Pack to install.

`-h` | `-help`: Shows the help message.

You can specify the `<mplocale>` as follows:

- `zh_CN`: Simplified Chinese locale
- `ja`: Japanese locale
- `de`: German locale
- `fr`: French locale
- `es`: Spanish locale
- `ko`: Korean locale
- `ru`: Russian locale

7. To accept the End User License Agreement (EULA), type **Yes** or **Y** and to decline the license agreement, type **No** or **N**.

**Note:** If you decline the EULA, the OMi MP for Oracle Database will not be installed.

After the installation is completed, a message appears stating that the installation of OMi Management Pack for Oracle Database is completed.

## On a Windows BSM 9.2x or OMi 10.x Server

To install the OMi MP for Oracle Database on a Windows BSM 9.2x or OMi 10.x Server, follow these steps:

1. Insert the DVD into the disk drive or you can copy the ZIP file to the BSM or OMi Server and extract it.
2. Open the command prompt, change the directory to `<DVD-ROM>` or to folder that has the installer script and run the following command:

```
cscript mpinstall.vbs -i
```

Based on the locale, you can see the following table and run the command accordingly:

E-media	MP locale same as BSM locale	MP locale different from BSM locale
English e-media	cscript mpinstall.vbs -i	cscript mpinstall.vbs -i
Non-English e-media	cscript /nologo mpinstall.vbs -i	cscript /nologo mpinstall.vbs -i -locale <mplocale>

For example, to install OMi MP for Oracle Database in Simplified Chinese locale with BSM in a non Simplified Chinese locale, specify the following command:

```
cscript /nologo mpinstall.vbs -i -locale zh_CN
```

**Note:** You can use the following command options:

```
cscript /nologo mpinstall.vbs -i [-locale <MP Locale>] [-h|help]
```

-i: Install Management Pack.

-locale : Locale specific Management Pack to install.

-h| -help: Shows the help message.

You can specify the <mplocale> as follows:

- zh\_CN: Simplified Chinese locale
- ja: Japanese locale
- de: German locale
- fr: French locale
- es: Spanish locale
- ko: Korean locale
- ru: Russian locale

3. To accept the End User License Agreement (EULA), type **Yes** or **Y** and to decline the license agreement, type **No** or **N**.

After the installation is completed, a message appears stating that the installation of OMi Management Pack for Oracle Database is completed.

## Applying the License

This section provides information about updating and activating the license.

**Note:** For more information about procuring the license, see the "[Licensing](#)" section.


To update your deployment with a new license and to activate the license, follow these steps:

1. Navigate to the License Management pane:

On BSM 9.2x, click **Admin > Platform > Setup and Maintenance > License Management**.

On OMi 10.x, click **Administration > Setup and Maintenance > License Management**.

The License Management provides details about the name, license type, days left to expiry of license, expiration date, capacity, and capacity details.

2. Click  to open the Add License dialog box where you can search for the relevant .dat file.

**Note:** You can download .dat file from <http://enterpriselicense.hpe.com>.

**Note:** For OMi MP for Oracle Database, when an Oracle instance is disabled, the license count becomes zero. When the collection is turned OFF using the command `dbspicol OFF`, the OMi MP for Oracle Database instance count becomes 1.

## Installing Operations Orchestration (OO) Flows

The OMi MP for Oracle Database is packaged with OO flows that enables IT process automation and run book automation. For more information about OO flows, see the *Operations Orchestration* documentation. The following section provides information about installing OO flows on OO Studio (version 9.0x) for OMi MP for Oracle Database.

**Note:** The OO flows shipped by OMi MP for Oracle Database can only be used in deployment scenarios where the application is monitored by Smart Plug-ins managed by an HP Operations Manager (HPOM) server. In such a case, the OO flows included in OMi MP for Oracle Database can be installed on an OO server and launched through the OMi-OO integration. For more information about the OMi-OO integration, see the *BSM - Operations Orchestration Integration Guide*.

## Uploading OO Flows

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

1. In BSM 9.2x or OMi 10.x, go to the directory:

**On Linux:**

```
/opt/HP/BSM/conf/opr/oo
```

**On Windows:**

```
%TOPAZ_HOME%\conf\opr\oo
```

2. Copy **HP0prOOOra90.jar** to a temporary location on a system where HP OO Studio (version 9.0x) is installed.

- **HP0prOOOra.jar** for Oracle

To install and upload the OO Flows, run the command:

```
java -jar -Xmx1024m "<temp>/HP0prOOOra90" -centralPassword <centralpassword>
```

**Note:** For more information about installing content, see the section *Installing the content* in the *Operations Orchestration Software Development Kit Guide*.

Using OO Studio, you can access the OO flows from the following location:

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

3. 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**.

## Verifying the OMi MP for Oracle Database Installation

This section provides information about verifying the installation of OMi MP for Oracle Database on BSM 9.2x or OMi 10.x (Linux and Windows) servers.

You can perform any one of the following checks to verify the OMi MP for Oracle Database installation:

- Check the log files for any errors on BSM GWS (BSM 9.2x or OMi 10.x), BSM DPS (BSM 9.2x or OMi 10.x), and BSM typical servers (BSM 9.2x or OMi 10.x) at the following locations:

**For Linux:**

`/opt/HP/BSM/log/mpinstall.log`

**For Windows:**

`%TOPAZ_HOME%\log\mpinstall.log`

**Note:** The OMi logs are available on both (BSM 9.2x or OMi 10.x) GWS and (BSM 9.2x or OMi 10.x) DPS at the following location:

On BSM < or = 9.25

**Linux:** `/opt/HP/BSM/log/EJBContainer/opr-configserver.log`

**Windows:** `%TOPAZ_HOME%\log\EJBContainer\opr-configserver.log`

On BSM > or = 9.26 and OMi 10.x

**Linux:** `/opt/HP/BSM/log/jboss/opr-webapp.log`

**Windows:** `%TOPAZ_HOME%\log\jboss\opr-webapp.log`

- Check the following location BSM 9.2x or on the OMi 10.x console:
  - On BSM 9.2x, click **Admin > Operations Management > Setup > Content Packs**.  
The **OMi Management Pack for Oracle Database** must appear in the Content Pack Definitions pane.
  - On OMi 10.x, click **Administration > Setup and Maintenance > Content Packs**.  
The **OMi Management Pack for Oracle Database** must appear in the Content Pack Definitions pane.

- To list the OMi MPs installed on the BSM 9.2x or OMi 10.x server, run the following command on BSM 9.2x or OMi 10.x GWS:

**For Linux:**

```
/opt/HP/BSM/bin/ContentManager.sh -l -username <username> -password <pwd>
```

**For Windows:**

```
%TOPAZ_HOME%\bin\ContentManager.bat -l -username <username> -password <pwd>
```

**Note:** The ContentManager.bat or ContentManager.sh command lists the Content Pack name and version.

- The version number of OMi MP for Oracle Database is 1.10, whereas the version number of Management Templates, Aspects, and Policy Templates is 1.00.


## Chapter 3: Getting Started

The following section provides step-by-step instructions about deploying out-of-the-box components of OMi MP for Oracle Database for monitoring Oracle databases using the BSM or OMi.

### Task 1: Adding Nodes to the BSM 9.2x or OMi 10.x Console

**Note:** If the Node already exists in RTSM, you can skip this step and proceed to "[Task 4: Deploying the Oracle Discovery Aspect](#)".

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

1. Open the Monitored Nodes pane:  
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 then 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 Operations Agent needs to be activated to OMi server and certificate needs to be granted.


### Task 2: Enabling the Enrichment Rules

You must enable the following enrichment rules to populate the CI's display label with additional information about container or the hostname:



- `SoftwareElementDisplayLabelForNewHost`
- `SoftwareElementDisplayLabelForExistingHost`
- `SoftwareElementDisplayLabelPopulator`

To enable the Enrichment Rules, follow these steps:

1. Open the Enrichment manager pane:  
 On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Enrichment manager**.  
 On OMi 10.x, click **Administration > RTSM Administration > Modeling > Enrichment manager**.
2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list.
3. Right-click and select **Properties**. The Enrichment Rule Properties window appears.
4. Click **Next**.
5. Select **Rule is Active**.
6. Click **Finish**.
7. In the Enrichment Rules pane, click  to save the changes.
8. Select **SoftwareElementDisplayLabelForExistingHost** and repeat steps 3 to 7.
9. Select **SoftwareElementDisplayLabelPopulator** and repeat steps 3 to 7.

## Task 3: User Privileges for non-root User

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

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

## Task 4: 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 Management Templates & 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. *(Optional)*. 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, click **Next**.
7. *(Optional)*. If you do not want to enable the assignment immediately, follow the step:

On BSM 9.2x, clear the **Enable Assigned Objects** check box.

On OMi 10.x, clear the **Enable Assignment(s)** check box.

You can then 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 the following location:

On BSM 9.2x, click **Admin > Operations Management > Monitoring > Deployment Jobs**.

On OMi 10.x, click **Administration > Monitoring > Deployment Jobs**.

## Task 5: Configuring OMi MP for Oracle Database for Operations Agent running with non-root user

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

1. Run the script as a root user under `/var/opt/OV/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 6: Verifying Discovery

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

To view the CIs, follow these steps:

1. Open the Events 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 View Explorer, select **ORA\_Deployment** from the drop-down list to see the associated CIs.

## Task 7: Deploying the Oracle Management Templates or Oracle Aspects

This section provides information about deploying the out-of-the-box Management Templates and Aspects. For more information about deploying Oracle Management Templates, go to "[Task 7a: Identifying and Deploying an Oracle Management Template](#)". For information about deploying Oracle Aspects, go to "[Task 7b: Deploying Oracle Aspects](#)".

### Data Collection

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:

Parameter	Frequency
Very High	5 mins
High	15 mins
Medium	1 hour
Low	24 hours

After Management Templates and Aspects are deployed, the collector is triggered based on the predefined frequency parameter in a specific policy. You can modify the default value of the parameter at following two 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 section *Editing Parameters in the OMi MP for Oracle Database User Guide*.

## Task 7a: Identifying and Deploying an Oracle Management Template

You **must** deploy the Oracle Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM and so on. For more information, see "[Task 4: Deploying the Oracle Discovery Aspect](#)".

Before deploying the Oracle Management Templates, you must identify the Oracle Management Template suitable for your environment by following these recommendations:

- If you want to monitor the basic functionality of Oracle database environment that consists of any of these environments - RAC, ASM, Dataguard or single instance databases, you can deploy **Essential Oracle Management Template**.
- For in-depth and detailed monitoring of RAC environments, you can deploy **Extensive Oracle Management Template**. This Management Template must be deployed on all instances in the cluster.
- For detailed monitoring of Dataguard environments, you can deploy **Extensive Oracle Management Template**. This Management Template must be deployed on primary and standby nodes.
- For detailed monitoring of ASM environments, you can deploy **Extensive Oracle Management Template**. This Management Template must be deployed on ASM CIs. You must ensure that the **ASM instance parameter** is set to **Yes**.
- For agentless monitoring, you can deploy **Hybrid Oracle Management Template**.

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**.
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 Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, 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**.

**Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, 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  **Show Expert Parameters**.

- c. Click **Next**.
7. *(Optional)*. In the **Configure Options** tab, if you do not want to enable the assignment

immediately, follow the step:

On BSM 9.2x, clear the **Enable Assigned Objects** check box.

On OMi 10.x, clear **Enable Assignment(s)** check box.

You can then 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>

**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**.



## Task 7b: Deploying Oracle Aspects

You **must** deploy the Oracle Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM and so on. For more information, see "[Task 4: 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** to go to All Parameters.

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

**Note:** In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, 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  **Show Expert Parameters**.

5. (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 then enable the assignment later using the Assignments & Tuning pane.
6. Click **Finish**.

## Task 8: Configuring Oracle Database Error Log Monitoring for non-root Operations Agent User

1. To identify the Oracle database alert log to be monitored, run the following command:

```
/var/opt/OV/bin/instrumentation/dbspicao -l
```

2. You must provide read permission to the non-root user for alert log monitoring.

# Appendix A: Installing Monitoring Automation

## 9.23 Software Update

This section provides detailed information about installing the software update in a distributed BSM environment.

If you do not have a distributed BSM environment, you can skip to the section "[Installing Additional Software Update in a Typical BSM Environment](#)".

### Installing Additional Software Update in a Distributed BSM Environment

In a distributed BSM environment, the BSM DPS and BSM GWS are available on different systems. The additional software update needs to be installed on both the BSM DPS and BSM GWS.

#### Installing Additional Software Update on BSM DPS

To install the additional software update on BSM DPS running in a distributed BSM environment, follow these steps:

1. Run the following commands to check the version of the current `opr-config-content-server.war` file:

**On Linux:**

```
cd /opt/HP/BSM/opr/webapps  
  
/opt/HP/BSM/opr/support/what.sh ./opr-config-content-server.war
```

**On Windows:**

Go to the drive where BSM is installed:

```
cd /d %TOPAZ_HOME%\opr\webapps  
  
cscript %TOPAZ_HOME%\opr\support\what.vbs opr-config-content-server.war
```

**Note:** If the version number is lower than 09.23.174, then proceed to the next step. If the version number is 09.23.174 or higher, then the current BSM installation already contains the required software update and you do not need to perform the remaining steps in this section.

- Run the following command to stop the BSM services running on BSM DPS:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm stop
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStop.bat
```

- Take a backup of the existing `opr-config-content-server.war` file, which exists in the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

```
%TOPAZ_HOME%\opr\webapps
```

The `opr-config-content-server.war` file must be backed up to a different folder.

- Extract the `HP0prMA_update.zip` to a temporary folder and copy `opr-config-content-server.war` to the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

```
%TOPAZ_HOME%\opr\webapps
```

- Run the following command to deploy the new WAR file from the extracted ZIP file:

**On Linux:**

```
/opt/HP/BSM/opr/bin/oprcfg-configuration.sh -setup omi -noGW
```

**On Windows:**

```
cscript %TOPAZ_HOME%\opr\bin\oprcfg-configuration.vbs -setup omi -noGW
```

- Run the following command to start the BSM services:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm start
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStart.bat
```

## Installing Additional Software Update on BSM GWS

To install the additional software update on BSM GWS running in a distributed BSM environment, follow these steps:

1. Run the following commands to check the version of the current `opr-config-server.war` file:

**On Linux:**

```
cd /opt/HP/BSM/opr/webapps
/opt/HP/BSM/opr/support/what.sh ./opr-config-server.war
```

**On Windows:**

Go to the drive where BSM is installed:

```
cd /d %TOPAZ_HOME%\opr\webapps
cscript %TOPAZ_HOME%\opr\support\what.vbs opr-config-server.war
```

**Note:** If the version number is lower than 09.23.174, then proceed to the next step. If the version number is 09.23.174 or higher, then the current BSM installation already contains the required software update and you do not need to perform the remaining steps in this section.

2. Run the following command to stop the BSM services running on BSM GWS:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm stop
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStop.bat
```

3. Take a backup of the existing `opr-config-server.war` file which exists in the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

```
%TOPAZ_HOME%\opr\webapps
```

The `opr-config-server.war` file must be backed up to a different folder.

4. Extract the `HP0prMA_update.zip` to a temporary folder and copy `opr-config-server.war` to the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

```
%TOPAZ_HOME%\opr\webapps
```

5. Run the following command to deploy the new WAR file from the extracted ZIP file:

**On Linux:**

```
/opt/HP/BSM/opr/bin/oprcfg-configuration.sh -setup omi
```

**On Windows:**

```
cscript %TOPAZ_HOME%\opr\bin\oprcfg-configuration.vbs -setup omi
```

6. Run the following command to start the BSM services:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm start
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStart.bat
```

## Installing Additional Software Update in a Typical BSM Environment

In a typical BSM environment, the BSM DPS and BSM GWS are available in the same system. To install the additional software update in a typical BSM environment, perform the following steps:

1. Run the following commands to check the version of the current `opr-config-server.war`:

**On Linux:**

```
cd /opt/HP/BSM/opr/webapps
/opt/HP/BSM/opr/support/what.sh ./opr-config-server.war
```

**On Windows:**

Go to the drive where BSM is installed:

```
cd /d %TOPAZ_HOME%\opr\webapps
cscript %TOPAZ_HOME%\opr\support\what.vbs opr-config-server.war
```

**Note:** If the version number is lower than 09.23.174, then proceed to the next step. If the version number is 09.23.174 or higher, then the current BSM installation already contains the required software update and you do not need to perform the remaining steps in this section.

2. Run the following command to stop the BSM services running on BSM Server:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm stop
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStop.bat
```

3. Take a backup of the existing `opr-config-server.war` file which exists in the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

```
%TOPAZ_HOME%\opr\webapps
```

The `opr-config-server.war` file must be backed up to a different folder.

4. Extract the `HP0prMA_update.zip` to a temporary folder and copy `opr-config-server.war` to the following folder:

**On Linux:**

```
/opt/HPBSM/opr/webapps
```

**On Windows:**

%TOPAZ\_HOME%\opr\webapps

5. Run the following command to deploy the new WAR file from the extracted ZIP file:

**On Linux:**

```
/opt/HP/BSM/opr/bin/oprcfg-configuration.sh -setup omi
```

**On Windows:**

```
cscript %TOPAZ_HOME%\opr\bin\oprcfg-configuration.vbs -setup omi
```

6. Run the following command to start the BSM services:

**On Linux:**

```
/opt/HP/BSM/scripts/run_hpbsm start
```

**On Windows:**

```
%TOPAZ_HOME%\bin\SupervisorStart.bat
```



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