



# OMi Management Pack for Microsoft SQL Server

Software Version: 1.01

For the Operations Manager i for Linux and Windows® operating systems

## Installation Guide

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# Chapter 1: Introduction

The OMi Management Pack for Microsoft SQL Server (OMi MP for Microsoft SQL Server) works with Operations Manager i (OMi) and enables you to monitor Microsoft SQL Server and its underlying infrastructure running in your environment. The OMi MP for Microsoft SQL Server includes the following components for monitoring the health and status of Microsoft SQL Server.

**Note:** For more information about the components, see the *OMi Management Pack for Microsoft SQL Server Online Help or User Guide*.

- Microsoft SQL Server Management Templates
- Microsoft SQL Server Aspects and Policy Templates
- Parameters
- Configuration Item (CI) and Configuration Item Types (CITs)
- Run-time Service Model (RTSM) Views
- Health Indicators (HIs)
- Event Type Indicators (ETIs)
- Policy Template Groups
- Topology Based Event Correlation (TBEC) Rules
- Operations Orchestration (OO) Flows
- Tools
- Graph Templates

## Abbreviations Used in this Manual

Abbreviations	Expansion
BSM	Business Service Management
OMi	Operations Manager i
RTSM	Run-time Service Model
BSM DPS	BSM Data Processing Server

Abbreviations	Expansion
BSM GWS	BSM Gateway Server
OMi MP	OMi Management Pack
OMi MP for Microsoft SQL Server	OMi Management Pack for Microsoft SQL Server

## Related Documentation

For more information about BSM and Monitoring Automation, see documentation for *Business Service Management*.

For more information about OMi, see documentation for *Operations Manager i*.

For more information about OMi MP for Microsoft SQL Server, see the following documents:

- OMi MP for Microsoft SQL Server - *Release Notes*
- OMi MP for Microsoft SQL Server - *User Guide*
- OMi MP for Microsoft SQL Server - *Reference 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 SQL 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.

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

# Chapter 2: Installing OMi MP for Microsoft SQL Server

This section provides information about installing OMi MP for Microsoft SQL Server on BSM 9.2x and OMi 10.x (Linux and Windows) Servers.



## Installation Package

The following section provides information about the installation package for OMi MP for Microsoft SQL Server 1.01.

**Note:** You must install OMi MP for Microsoft SQL Server 1.00 from the MPDVD or e-media, before installing OMi MP for Microsoft SQL Server 1.01. 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. If the OMi MP for Microsoft SQL Server 1.00 is installed, see ["Installing OMi MP for Microsoft SQL Server 1.01"](#).

The OMi MP for Microsoft SQL Server 1.01 is available at [Unified Marketplace](#). The package contains the OMi MP for Microsoft SQL Server 1.01 update and the product documentation. In a distributed environment, it must be installed on all BSM 9.2x or OMi 10.x Data Processing Servers (DPS) and BSM 9.2x or OMi 10.x Gateway Servers (GWS).

The following table provides information about the documentation available:

Document	Location	Purpose
Online Help	Available in the BSM 9.2x 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 Microsoft SQL Server</b>  Available in the OMi 10.x console  menu.  From the OMi console, go to  <b>General Help &gt; Administration Guide &gt;</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>



Document	Location	Purpose
	<b>Management Packs &gt; Management Pack Documentation &gt; OMi Management Pack for Microsoft SQL Server.</b>	
User Guide	<a href="#">Unified Marketplace</a>	
Release Notes	<a href="#">Unified Marketplace</a>	To provide information about the following: <ul style="list-style-type: none"> <li>• Salient Features</li> <li>• Installation Notes</li> </ul>
Installation Guide		Installation instructions
Reference Guide	<a href="#">Unified Marketplace</a>	To provide complete information policies and corresponding events and instructions.

**Note:** For the latest guides mentioned above, please see <https://softwaresupport.hpe.com>.

## Installation Prerequisites

The following section lists the prerequisites for installing OMi MP for Microsoft SQL Server on BSM 9.2x (Linux and Windows) and OMi 10.x (Linux and Windows) servers. It also provides information about the prerequisites required for monitoring Microsoft SQL Server instances.

## Software Requirements

Before installing OMi MP for Microsoft SQL Server, the following components must be installed and configured on the BSM 9.2x or OMi 10.x servers.

**Note:** Install and configure SiteScope only if you plan to perform agentless monitoring.

### Server

Component	Version
BSM	9.23 or higher*
Operations Manager i	9.23 or higher*



Component	Version
Monitoring Automation	9.23 or higher*
OMi MP for Infrastructure	1.10 or higher*

\* See the Support Matrix for latest versions supported.

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

If you have upgraded to BSM 9.25, you must additionally install the **BSM 9.25 patch for OMi Management Pack** after installing OMi MP for Microsoft SQL Server 1.00. In a distributed BSM environment, install the **BSM 9.25 patch for OMi Management Pack** only on the Gateway Servers.

### Managed Node

Component	Version
Operations Agent	11.12 or higher*

\* See the Support Matrix for latest versions supported.

### SiteScope Server

Component	Version
SiteScope	11.22 or higher*

**Note:** \* For more information about Support Matrix, see [Support Matrices for Operations Center products](#) (HPE Passport sign in required).

## Installation Checklist

If you have already installed OMi 10.x, skip to [Task 5](#).

### Server Checklist

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> </ul>

Serial	Task	Reference
		<ul style="list-style-type: none"> <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 <i>Installing Monitoring Automation</i> section in the <i>Operations Manager i Monitoring Automation Installation Guide</i> .
4	Verify the Monitoring Automation installation	See the <i>Using Monitoring Automation</i> chapter in the <i>Monitoring Automation for Operations Manager i Installation Guide</i> .
5	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</i> version 1.00 in the <i>OMi Management Pack for Infrastructure Installation Guide</i> .
6	Install OMi MP for Infrastructure 1.10 or later	See the chapter <i>Installing OMi MP for Infrastructure 1.10</i> in the <i>OMi Management Pack for Infrastructure Installation Guide</i> .
7	Install OMi MP for Microsoft SQL Server 1.00	See the section <a href="#">Installing OMi MP for Microsoft SQL Server 1.00</a> .
8	Install OMi MP for Microsoft SQL Server 1.01	See the section " <a href="#">Installing OMi MP for Microsoft SQL Server 1.01</a> ".
9	Applying the License	See the section <a href="#">Applying the License</a> .

### Managed Node Checklist

Task	Reference
Install Operations Agent 11.12 or later	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> .

## Installing OMi Management Pack for Microsoft SQL Server version 1.00

You can use the e-media or MPDVD to install the OMi MP for Microsoft SQL Server on BSM or OMi Server (Linux or Windows). The following section provides information about installing the OMi MP for Microsoft SQL Server 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 Microsoft SQL Server must be installed on all BSM or OMi Servers - BSM or OMi DPS and BSM or OMi GWS.

For BSM 9.2x, you must ensure 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

**Note:** In a BSM or OMi distributed environment, OMi MP for Microsoft SQL Server must be installed on all BSM Servers, including DPS and Gateway servers.

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

1. Log on as 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 Microsoft SQL Server 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 Microsoft SQL Server will not be installed.

After the installation is completed, a message appears stating that the installation of OMi Management Pack for Microsoft SQL Server is completed.

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

To install the OMi MP for Microsoft SQL Server 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 e-media 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 /nologo 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	<code>cscript /nologo mpinstall.vbs -i</code>	<code>cscript /nologo mpinstall.vbs -i</code>
Non-English e-media	<code>cscript /nologo mpinstall.vbs -i</code>	<code>cscript /nologo mpinstall.vbs -i -locale &lt;mplocale&gt;</code>

For example, to install OMi MP for Microsoft SQL Server 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 Microsoft SQL Server is completed.

# Installing OMi MP for Microsoft SQL Server 1.01

This section provides information about installing OMi MP for Microsoft SQL Server 1.01 on BSM 9.2x or OMi 10.x (Windows or Linux) servers.

**Note:** In a BSM 9.2x or OMi 10.x distributed environment, the OMi MP for Microsoft SQL Server 1.01 must be installed on all BSM 9.2x or OMi 10.x Servers - (BSM 9.2x or OMi 10.x) DPS and (BSM 9.2x or OMi 10.x) GWS.

To download and install the OMi MP for Microsoft SQL Server 1.01 update, follow these steps:

1. Download the **OMi MP for Microsoft SQL Server Update 01.01** from the following location:  
[Unified Marketplace](#)
2. Extract it to a *Temp* folder on your BSM 9.2x or OMi 10.x server.

## For Linux:

1. Log on as root user.

**Note:** If OMi is configured as a non-root user, log on as OMi non-root.

2. Set the umask by typing the command `umask 022`.
3. Change the directory to extract the file to the *Temp* folder:
4. Run the following command:

```
<PATH>/mpinstall.sh -i
```

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

When the installation completes, a message appears stating that the OMi Management Pack Installation Finished.

## For Windows:

1. From the command prompt, change directory to the *Temp* folder where **OMi MP for Microsoft SQL Server Update 01.01** was extracted.
2. Run the following command:

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

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

When the installation completes, a message appears stating that the OMi Management Pack Installation Finished.

## Verifying the OMi MP for Microsoft SQL Server Installation or Upgrade

This section provides information about verifying the installation of OMi MP for Microsoft SQL Server 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 Microsoft SQL Server installation:

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

### For BSM 9.2x

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

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

### For OMi 10.x

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

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



- Check the following location on BSM 9.2x or OMi 10.x Console:
  - On BSM 9.2x, click **Admin > Operations Management > Setup > Content Packs**.
  - On OMi 10.x, click **Administration > Setup and Maintenance > Content Packs**.

The **OMi Management Pack for Microsoft SQL Server 1.00 and 1.01** must appear in the Content Pack Definitions pane.

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

**For Linux:**

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

**For Windows:**

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

Verify that the command gives the following output:

- OMi\_MgmtPack\_MSSQL\_Update\_01\_01 (1.01)
- OMi\_MgmtPack\_MSSQL (1.00)

**Note:** The ContentManager.bat or ContentManager.sh command lists the Content Pack name and version of all the MPs installed on the BSM server.

## 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:** There will be a delay in license activation after the installation. If the license does not activate automatically, you need to perform step 3.

3. (Optional). To activate the license on BSM 9.2x, click the **Server Deployment** link at the bottom of the License Management window.
4. Select the check box corresponding to respective **Application** and click **Save**.

## Installing Operations Orchestration (OO) Flows

The OMi MP for Microsoft SQL Server 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 HP OO Studio (version 9.0x) for OMi MP for Microsoft SQL Server.

**Note:** The OO flows shipped by OMi MP for Microsoft SQL Server 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 Microsoft SQL Server 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 Orchestrations Integration Guide*.

## Uploading OO Flows

To upload OO Flows from OMi MP for Microsoft SQL Server, 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 HP0pr00Mss90.jar to a temporary location on a system where OO Studio (version 9.0x) is installed.

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

```
java -jar -Xmx1024m "<temp>/HP0pr00Mss90" -centralPassword <centralpassword>
```

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

Using HP 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**.


# Chapter 3: Getting Started

The following section provides step-by-step instructions about deploying out-of-the-box components of OMi MP for Microsoft SQL Server for monitoring Microsoft SQL Servers using the BSM or OMi console.

## 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 2: Deploying the Microsoft SQL Server 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**. 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 on the BSM or OMi server and certificate needs to be granted.

## Task 2: Deploying the Microsoft SQL Server Discovery Aspect

To discover the SQL Server CIs on the added managed nodes, you must deploy the Microsoft SQL Server Discovery Aspect.


1. Open the Management Templates & Aspects pane:

On BSM 9.2x, click **Admin > Operations Management > Monitoring > Management Templates and Aspects**.

On OMi 10.x, click **Administration > Monitoring > Management Templates & Aspects**.

2. In the Configuration Folders pane:

**Configuration Folders > Database Management > Microsoft SQL Server > Microsoft SQL Server Aspects**.

3. In the Microsoft SQL Server Aspects folder, right-click the **Microsoft SQL Server Discovery** Aspect, and then click  **Assign and Deploy Item** to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, click the configuration item to which you want to deploy the Discovery aspect and then click **Next**.
5. *(Optional)*. In the **Required Parameters** tab, click **Next**.

**Note:** Microsoft SQL Server 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 on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, 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 Microsoft SQL Server 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 3: Verifying Discovery

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

To view the CIs populated in the View Explorer, 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, from the **Browse Views** tab, select the following view from the drop-down list to see the associated CIs.
  - If Microsoft SQL Server is configured in a cluster:  
**MSSQL\_Cluster\_Deployment**
  - If Microsoft SQL Server is NOT configured in a cluster:  
**MSSQL\_Database\_Deployment**  
**MSSQL\_Deployment**

## Task 4: Deploying the Microsoft SQL Server Management Templates or Microsoft SQL Server Aspects

This section is further divided into [Task 4a: Microsoft SQL Server Management Templates](#) and [Task 4b: Deploying Microsoft SQL Server Aspects](#) provides information on identifying and deploying the Microsoft SQL Server Management Templates or Aspects based on your specific requirements.

## Task 4a: Deploying Microsoft SQL Server Management Templates

You **must** deploy the Microsoft SQL Server 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 2: Deploying the Microsoft SQL Server Discovery Aspect](#)".

If you have already deployed MTs or Aspects with 1.00 version, skip to [Task 5](#).

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

- If you want to monitor basic functionality of Microsoft SQL Server cluster environment, you can deploy **Essential Microsoft SQL Server Cluster Management Template**.
- If you want to monitor basic functionality of Microsoft SQL Server environment, you can deploy the **Essential Microsoft SQL Server Management Template**.
- For in-depth and detailed monitoring of Microsoft SQL Server cluster environment, you can deploy **Extensive Microsoft SQL Server Cluster Management Template**.
- If you want to monitor the standalone Microsoft SQL Server environment, you can deploy **Extensive Microsoft SQL Server Management Template**.
- For agent and agentless monitoring, you can deploy **Hybrid Microsoft SQL Server Management Template**.

To deploy the Microsoft SQL Server Management Templates to the Microsoft SQL Server CIs, 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 > Microsoft SQL Server > Microsoft SQL Server Management Templates**.
3. In the **Microsoft SQL Server 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**.
5. In the **Required Parameters** tab, you must specify the parameters based on the environment:

For the list of grants and privileges of Microsoft SQL Server user account for OMi MP for Microsoft SQL Server, see "[Permissions and Grants](#)" on page 30.

**Note:** For **Microsoft SQL Server with Windows authentication**: You do not have to specify the Domain Name, User Name, and Password.

For **Mixed Mode authentication**: You must specify the user name and password of the SQL Server User.



For **Microsoft SQL Server Domain Authentication**: You must specify the user name, domain name, and password of the system.





For **Hybrid Microsoft SQL Server Management Template**: The assignment is supported with SQL Server Authentication.

**Note:** The User Name that you enter during the deployment of a Management Template must have the required privileges to connect to the Microsoft SQL Server and collect the data for monitoring needs of OMi MP for Microsoft SQL Server. Following are the guidelines:

- When you have the predefined User Name created by the admin, you can use the same while deploying the Management Template.
- When you want to use the create user tools provided by Management Pack explicitly, you need to deploy Management Templates without entering the User Name and Password as there are no mandatory parameters.

After you deploy the Management Template, all the files are deployed and you can run the create user tool to create users and update the User Name and Password parameters to begin the monitoring.

- a. Select the **Microsoft SQL Server Instance User Name** parameter in the list, and then click . The Microsoft SQL Server Instance User Name dialog box opens.
- b. Click **Value**, specify the value, and then click **OK**.
- c. Select the **Microsoft SQL Server Instance Password** parameter in the list, and then click . The Microsoft SQL Server Password dialog box opens.
- d. Click **Value**, specify the value, and then click **OK**.

- e. Select the **Microsoft SQL Server Domain Name** parameter in the list, and then click the . The Microsoft SQL Server Domain Name dialog box opens.
    - f. Click **Value**, specify the value, and then click **OK**.
  6. Click **Next**.
  7. 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 **MSSQL Server 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 defined as expert parameters are not shown. To show expert parameters, click  **Show Expert Parameters**.
8. Click **Next**.
  9. *(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 the **Enable Assignment(s)** check box.

You can then enable the assignment later using the Assignments & Tuning pane.
  10. Click **Finish**.


For detailed information about monitoring Microsoft SQL Server instances using OMi MP for Microsoft SQL Server, see the *HPE OMi Management Pack for Microsoft SQL Server Online Help* or the *User Guide*.

## Task 4b: Deploying Microsoft SQL Server Aspects

You **must** deploy the Microsoft SQL Server Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM, and so on. After you deploy a Management Template,

additional CIs are discovered. For more information, see "[Task 2: Deploying the Microsoft SQL Server Discovery Aspect](#)".

To deploy Microsoft SQL Server Aspects to the Microsoft SQL Server CIs, 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 > Microsoft SQL Server > Microsoft SQL Server Aspects**.
3. In the **Microsoft SQL Server Aspects** folder, right-click the Microsoft SQL Server Aspect that you want to deploy, and then click **Assign and Deploy** item to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, click the configuration item to which you want to deploy the Aspect and then click **Next**.
5. *(Optional)*. In the **Required Parameters** tab, click **Next**.  
  
**Note:** Microsoft SQL Server Aspects do not have Mandatory Parameters. You will get a notification stating that There are no parameters that require editing for this Assignment.
6. *(Optional)*. 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 edit the parameters, follow these steps:
  - a. Double-click the parameter, or select the parameter from the list, and then click . The Edit Parameter window opens.
  - b. Change the default value and click **OK**.
  - 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 the **Enable Assignment(s)** check box.  
  
You can then enable the assignment later using the Assignments & Tuning pane.
8. Click **Finish**.

## Task 5: Updating the Management Templates and Aspects to a Newer Version

You can update the existing deployed Management Templates and Aspects to the latest version.

If you have already deployed OMi MP for Microsoft SQL Server Aspects or Management Templates to the managed nodes before installing OMi MP for Microsoft SQL Server 1.0, then use the latest version of Aspects or Management Templates on those nodes.

Perform the following steps for each Management Template and Aspect assignment on each of the managed nodes:

### For BSM 9.2x:

1. Open the Management Templates & Aspects pane and click **Admin > Operations Management > Monitoring > Management Templates & Aspects**.
2. Select 1.0 SQL Server Aspects or Management Templates that has been deployed to nodes.
3. Redeploy with parameterization to each of the SQL Server CIs.

### For OMi 10.x:

1. Open the Assignments & Tuning pane and click **Administration > Monitoring > Assignments & Tuning**.
2. In the Browse Views pane, select the **MSSQL\_Database\_Deployment** view and select each SQL Server 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:
  - Select the latest version from the **Update to Version** drop down list.
  - If you select **Use parameter values from existing assignments**, only the new mandatory parameters 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.

6. Click **Next** to go to **Required Parameters**.

To change a parameter, double-click or select the parameter from the list and click **Edit**.

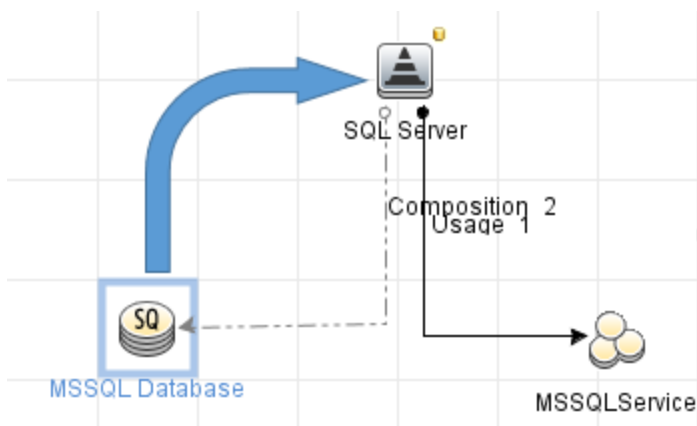
The Edit Parameter dialog opens. If there are no mandatory parameters that require editing for this assignment, you are automatically taken to the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x.

7. Click **Next** to go to **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, or click **Finish** to save the changes and close the wizard.
8. Click **Finish** to save the changes and close the wizard. The assigned item is updated to the specified Management Template or Aspect version.

**Note:** To update the existing deployed Management Templates and Aspects of the OMi MP for Infrastructure (which are internally used by OMi MP for Microsoft SQL Server) to the latest version, see section *Getting Started* in the *HPE OMi Management Pack for Infrastructure Installation Guide*.

## Enriching Microsoft SQL Server Database Events (Optional)


Events are automatically mapped to the CIs during out-of-the-box deployment. By default, database events (for example, metric 233 and 278) are mapped to the SQL Server CI, as shown in the following figure:



If you want to customize the Microsoft SQL Server database events to be enriched at SQL Database CI instead of SQL Server CI, add the following enrichment rule:

```
<Enrichment>[sqldatabase].from:composition.[sqlserver].name</Enrichment>
```

Perform the following steps to add the enrichment rule:

1. Open the Infrastructure Settings pane:  
On BSM 9.2x, click **Admin > Platform > Setup and Maintenance > Infrastructure Settings**.  
On OMi 10.x, click **Administration > Setup and Maintenance > Infrastructure Settings**.
2. Under **Select Context**, select **Applications** and click **Operations Management** from the drop-down list.
3. Under **Operations Management - CI Resolver Settings**, look for the **Cache Modification Configuration** setting and click  to add or edit the XML values.
4. In the **Edit Setting** dialog box, add the enrichment rule in the **Value** field, before the `</CiResolver>` tag.


```
<Enrichment>[sqldatabase].from:composition.[sqlserver].name</Enrichment>
```

```
</CiResolver>
```

## Checking Topology Synchronization Settings

If there are HP Operations Manager (HPOM) servers in the environment and you want to synchronize the topology information discovered by Smart Plug-in for Microsoft SQL Server (SPI for Microsoft SQL Server) to the OMi, then follow these steps:

1. Open the Infrastructure Settings from the Administration:  
On BSM 9.2x, click **Admin > Platform > Setup and Maintenance > Infrastructure Settings**.  
On OMi 10.x, click **Administration > Setup and Maintenance > Infrastructure Settings**.
2. In the Infrastructure Settings, select **Applications > 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;HPOprMss**.
4. If the package is not available, add the toposync package by following these steps:

- a. In the Packages for Topology Sync, click .
- b. In Value, add **HPOprMss** and click **Save**.



## Permissions and Grants

Following is the list of grants and privileges of Microsoft SQL Server user account for OMi MP for Microsoft SQL Server.

Database master:	Database msdb:
GRANT create table	GRANT select ON msdb.dbo.agent_datetime
GRANT select ON sys.objects	GRANT select ON msdb..sysjobs
GRANT select ON sys.sysperfinfo	GRANT select ON msdb..sysjobhistory
GRANT select ON sys.dm_os_ performance_counters	GRANT select ON msdb..sysjobsteps
GRANT select ON sys.sysprocesses	GRANT select ON msdb..sysjobschedules
GRANT select ON sys.dm_exec_sessions	GRANT select ON msdb..sysjobs_view
GRANT select ON sys.dm_exec_requests	GRANT select ON msdb..MSdistributiondbs
GRANT select ON sys.dm_tran_locks	GRANT select ON msdb..log_shipping_monitor_ primary
GRANT select ON sys.sysconfigures	GRANT select ON msdb..log_shipping_primary_ databases
GRANT select ON sys.configurations	GRANT select ON msdb..log_shipping_monitor_ error_detail
GRANT select ON sys.databases	GRANT select ON msdb..log_shipping_monitor_ secondary
GRANT select ON sys.sysdatabases	GRANT select ON msdb..log_shipping_secondary
GRANT select ON sys.sysfiles	GRANT select ON msdb..sysjobobservers
GRANT select ON sys.database_files	GRANT select ON msdb..sysjobactivity
GRANT select ON sys.sysindexes	GRANT execute ON msdb..sp_help_job
GRANT select ON sys.partitions	EXEC sp_dbmmonitorupdate
GRANT select ON sys.allocation_units	EXEC sp_addrolemember 'dbm_monitor', '<user>'
GRANT select ON sys.sysobjects	EXEC sp_addrolemember 'SQLAgentReaderRole', '<db mp user>'
GRANT select ON sys.sysdevices	
GRANT select ON sys.backup_devices	
GRANT execute ON sys.sp_monitor	
GRANT execute ON sys.xp_sqlagent_ enum_jobs	
EXEC sp_configure 'show advanced	

Database master:	Database msdb:
option', '1'  GRANT VIEW SERVER STATE to '<user>'	

Perform on all databases:

```
GRANT select on executionlog
```

```
exec sp_addrolemember 'db_datareader', '<user>'
```

Grant the following to all databases listed in the msdb..MSdistributiondbs:

```
GRANT select ON MSmerge_agents
```

```
GRANT select ON MSmerge_history
```

```
GRANT select ON MSmerge_sessions
```

```
GRANT select ON MSsnapshot_agents
```

```
GRANT select ON MSlogreader_agents
```

```
GRANT select ON MSdistribution_history
```

```
GRANT select ON MSsnapshot_history
```

```
GRANT select ON MSlogreader_history
```

```
GRANT select ON MSdistribution_agents
```

Additionally, on all the databases, run the stored procedure `sp_grantdbaccess` by typing the following command:

```
EXEC sp_grantdbaccess '<user>', '<passwd>'
```

**Note:** Microsoft SQL Server metric 3035 needs DBCC opentran privilege to run.

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