



OMi Management Pack for Microsoft SQL Server

Software Version: 1.00

For 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 using the Business Service Management (BSM). 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)
- Topology Based Event Correlation (TBEC) Rules
- Operations Orchestration (OO) Flows
- Tools
- Graph Templates

Abbreviations Used in this Manual

Abbreviations	Expansion
OMi	Operations Manager i
RTSM	Run-time Service Model
OMi MP	OMi Management Pack
OMi MP for Microsoft SQL Server	OMi Management Pack for Microsoft SQL Server

Related Documentation

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*

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 Microsoft SQL Server

This section provides information about installing OMi MP for Microsoft SQL Server 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 Microsoft SQL Server. The OMi MP for Microsoft SQL Server is available in the OMi MP for Microsoft SQL Server 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 Microsoft SQL Server 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 Help menu. From the BSM console, go to Help > BSM Help > Application Administration > Operations Management > OMi Management Pack for Microsoft SQL Server Available in the OMi console ? menu. From the OMi console, go to ? > General Help > Administration Guide > Management Packs > OMi Management Pack for Microsoft SQL Server .	To provide information about the following: <ul style="list-style-type: none">• Using Microsoft SQL Server Management Templates• Using Microsoft SQL Server Aspects and Policy Templates• Using Indicators - HIs, ETIs, and TBEC Rules
Installation Guide	<MPDVD>\DOCUMENTATION\en	
User Guide	<MPDVD>\DOCUMENTATION\en	

Document	Location	Purpose
Release Notes	<MPDVD>\DOCUMENTATION\en	To provide information about the following: <ul style="list-style-type: none"> • Salient Features • Installation Notes

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.

Server Requirements

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

* See the Support Matrix for latest versions supported.

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

Managed Node Requirements

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*

* See the Support Matrix for latest versions supported.

Installation Checklist

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

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"> • <i>Install BSM 9.20</i> • <i>Install the latest BSM 9.2x Minor Minor Release and Patch</i>
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 Note: If you are installing this MP on BSM 9.23, you must install additional software update for Monitoring Automation 9.23.	See the section " Installing Additional Software Update for Monitoring Automation 9.23 ". This update is required only for BSM 9.23 and not for higher versions.
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> .

Serial	Task	Reference
7	Install OMi MP for Infrastructure 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	Install OMi MP for Microsoft SQL Server 1.00	See the section Installing OMi MP for Microsoft SQL Server 1.00 on BSM or OMi .
9	Applying the License	See the section Applying the License .

Managed Node Checklist

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> .

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 Microsoft SQL Server , 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 Microsoft SQL Server version 1.00 on BSM or OMi

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 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 Microsoft SQL Server 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 <mplocale></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 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 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:

- o zh_CN: Simplified Chinese locale
- o ja: Japanese locale
- o 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.

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 Microsoft SQL Server, when all the Microsoft SQL Server instances are disabled, the license count becomes zero. If there are any Microsoft SQL Server instances that are enabled, the license count becomes one.

When the collection is turned OFF using the command `dbspimsscol OFF`, then the OMi MP for Microsoft SQL Server instance count becomes 1.

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 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 Orchestration 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 **HPOprOOMss90.jar** to a temporary location on a system where HP OO Studio (version 9.0x) is installed.

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

```
java -jar -Xmx1024m "<temp>/HPOprOOMss90" -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 Microsoft SQL Server Installation

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 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 Microsoft SQL Server** must appear in the Content Pack Definitions pane.
 - On OMi 10.x, click **Administration > Setup and Maintenance > Content Packs**.
The **OMi Management Pack for Microsoft SQL Server** 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.

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.

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 3: 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 OMi server and certificate needs to be granted.

Task 2: Enabling the Enrichment Rules

You must enable the following enrichment rules to populate the Microsoft SQL Server 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: Deploying the Microsoft SQL Server Discovery Aspect

To discover the Microsoft 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 4: 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, select **MSSQL_Cluster_Deployment** or **MSSQL_Database_Deployment** view from the drop-down list to see the associated CIs.

Task 5: Deploying the Microsoft SQL Server Management Templates or Microsoft SQL Server Aspects

This section provides information about deploying Management Templates and Aspects. For more information about deploying Microsoft SQL Management Templates, go to "[Task 5a: Deploying Microsoft SQL Server Management Templates](#)". For more information about deploying Microsoft SQL Aspects, go to "[Task 5b: Deploying Microsoft SQL Server 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 Microsoft SQL Server User Guide*.

Task 5a: 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 3: Deploying the Microsoft SQL Server Discovery Aspect](#)".

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

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 *HP OMi Management Pack for Online Help* or the *User Guide*.

Task 5b: 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. For more information, see "[Task 3: Deploying the Microsoft SQL Server Discovery Aspect](#)".

To deploy Microsoft SQL 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 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**.

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 pane, 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**.

Appendix A: Permissions and Grants

Following is the list of grants and privileges for the 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.sysperfmio	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..sysjobserver
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.

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.

2. 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
```

3. 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.

4. 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
```

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 -noGW
```

On Windows:

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

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 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 `HPOprMA_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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