OMi Management Pack for Microsoft Active Directory

Software Version: 1.00

Operations Manager i for Linux and Windows® operating systems

Installation Guide

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Chapter 1: Introduction

The OMi Management Pack for Microsoft Active Directory (OMi MP for Microsoft Active Directory) works with Operations Manager i (OMi) and enables you to monitor Active Directory servers and underlying infrastructure operating in your environment. The OMi MP for Microsoft Active Directory provides Management Templates, Aspects, and Policy Templates for monitoring different features such as, Active Directory database files, Directory Information Tree (DIT) disk space, replication, response time, Domain Name System (DNS), and Windows Event Log. The Management Templates can be seamlessly deployed by an administrator for monitoring Active Directory servers in your environment.

The OMi MP for Microsoft Active Directory includes the following components for monitoring the health and status of the Active Directory servers:

- Microsoft Active Directory Management Templates
- Microsoft Active Directory Aspects
- Parameters
- Configuration Items (CIs) and Configuration Item Types (CITs)
- Run-Time Service Model (RTSM) Views
- Enrichment Rules
- Health Indicators (HIs) and Event Type Indicators (ETIs)
- Topology Based Event Correlation (TBEC) Rules
- Graph Templates
- Operations Orchestration (OO) Flows
- Tools

Note: For more information about the components, see the *OMi Management Pack for Microsoft Active Directory 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 Microsoft Active Directory	OMi Management Pack for Microsoft Active Directory

Related Documentation

For more information about OMi MP for Microsoft Active Directory, see the following documents:

- OMi MP for Microsoft Active Directory - *Release Notes*
- OMi MP for Microsoft Active Directory - *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 Active Directory

This section provides information about installing OMi MP for Microsoft Active Directory 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 Active Directory. The OMi MP for Microsoft Active Directory is available in the OMi MP for Microsoft Active Directory 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.

Product	Marketplace links
OMi MP for Microsoft Active Directory	Unified Marketplace

The OMi MP for Microsoft Active Directory 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 Active Directory** Available in the OMi console ? menu. From the OMi console, go to ? **> General Help > Administration Guide > Management Packs > OMi Management Pack for Microsoft Active Directory**.	To provide information about the following: • Using Microsoft Active Directory Management Templates • Using Microsoft Active Directory Aspects and Policy Templates • Using Indicators -

Document	Location	Purpose
Installation Guide	<MPDVD>\DOCUMENTATION\en	HIs, ETIs, and TBEC Rules
User Guide	<MPDVD>\DOCUMENTATION\en	
Release Notes	<MPDVD>\DOCUMENTATION\en	To provide information about the following: • Salient Features • Installation Notes

Installation Prerequisites

The following section lists the hardware and software prerequisites for installing OMi MP for Microsoft Active Directory on BSM 9.2x and OMi 10.x (Linux and Windows) servers.

Software Requirements

Before installing OMi MP for Microsoft Active Directory, 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 Requirement

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.

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

Installation Checklist

Ensure that the installation tasks described in the following table are completed in the specified order:

If you have already installed OMi 10.x, skip to Task 6.

Serial	Task	Reference
1	Check the Installation Prerequisites for BSM	See the chapter *General Prerequisites* in the *BSM Installation Guide*.
2	Install BSM version 9.20 and the BSM 9.23 or higher Service Pack	See the chapter *Install BSM 9.20* and the chapter *Install the latest BSM 9.2x Minor Minor Release and Patch* in the *BSM Installation Guide*.
3	Install Monitoring Automation version 9.23 or higher	See the chapters *Installation Prerequisites* and *Installing and Configuring Monitoring Automation on BSM servers* in the *Monitoring Automation for Operations Manager i Installation Guide*.
4	Verify the Monitoring Automation installation	See the chapter *Verifying the Installation* and *Using Monitoring Automation* in the *Monitoring Automation for Operations Manager i Installation Guide*.

Serial	Task	Reference
5	Install Additional Software Update for Monitoring Automation 9.23 **Note:** If you are installation OMi MP for Microsoft Active Directory 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".
6	Clean up OMi MP for Infrastructure version 1.00	If OMi MP for Infrastructure version 1.00 is already installed, see *Removing OMi MP for Infrastructure* version 1.00 in the *OMi Management Pack for Infrastructure 1.10 Installation Guide*.
7	Install OMi MP for Infrastructure 1.10	See the chapter *Installing OMi MP for Infrastructure 1.10* in the *OMi Management Pack for Infrastructure 1.10 Installation Guide*.
8	Install OMi MP for Microsoft Active Directory 1.00	See the section Installing OMi MP for Microsoft Active Directory 1.00 on BSM or OMi.
9	Applying the License	See the section "Applying the License".

Managed Node

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

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 Active Directory , 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 Active Directory version 1.00 on BSM or OMi

You can use the e-media or MPDVD to install the OMi MP for Microsoft Active Directory on BSM or OMi Server (Linux or Windows). The following section provides information about installing the OMi MP for Microsoft Active Directory 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 Active Directory 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 Active Directory 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	`./mpinstall.sh -i`	`./mpinstall.sh -i`
Non-English e-media	`./mpinstall.sh -i`	`./mpinstall.sh -i -locale <mplocale>`

   For example, to install OMi MP for Microsoft Active Directory 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

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 Active Directory will not be installed.

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

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

To install the OMi MP for Microsoft Active Directory 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 Active Directory 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

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 Active Directory is completed.

Installing Operations Orchestration (OO) Flows

The OMi MP for Microsoft Active Directory 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 Active Directory.

> **Note:** The OO flows shipped by OMi MP for Microsoft Active Directory can only be used in deployment scenarios where the application is monitored by Smart Plug-ins managed by an Operations Manager (OM) server. In such a case, the OO flows included in OMi MP for Microsoft Active Directory 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 Active Directory, 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 **HPOprOOADS90.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>/HPOprOOADS90" -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**.

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.

Verifying the OMi MP for Microsoft Active Directory Installation

This section provides information about verifying the installation of OMi MP for Microsoft Active Directory 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 Active Directory installation:

- Check the log files for any errors on GWS (BSM 9.2x or OMi 10.x), DPS (BSM 9.2x or OMi 10.x), and 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.logopr-configserver.log /*replaced based on information shared by Rajan, A V Kanaga Mari`
>
> **Windows:** `%TOPAZ_HOME%\log\jboss\opr-webapp.logopr-configserver.log /*replaced based on information shared by Rajan, A V Kanaga Mari`

- 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 Active Directory** 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 Active Directory** 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 monitoring Active Directory servers using OMi MP for Microsoft Active Directory.

Task 1: Adding Nodes to 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.

Before you begin monitoring, you need to add the nodes to the BSM or OMi console. Follow these steps:

1. Open the Monitored Nodes pane from the Administration:

   On BSM 9.2x, click **Admin** > **Operations Management** > **Setup** > **Monitored Nodes**.

   On OMi 10.x, click **Administration > Setup and Maintenance > Monitored Nodes**.

2. In the Node Views pane, click **Predefined Node Filters** > **Monitored Nodes**, and then click ✳, and then click **Computer** > **Windows or Unix**. The Create New Monitored Nodes window opens.

3. Specify the Primary DNS Name and verify the IP Address.

4. Specify the Operating System and Processor Architecture of the node from the drop-down list, and then click **OK**.

   The newly created node is saved as a Configuration Item (CI) instance in Run-Time Service Model (RTSM).

> **Note:** The node with Operations Agent needs to be activated on OMi server and certificate must be granted.

Task 2: Enabling the Enrichment Rules

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

- 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 **SoftwareElementDisplayLabelPopulator** from the list.

   Select **SoftwareElementDisplayLabelForExistingHost** from the list.

3. Right-click and select **Properties**. The Enrichment Rule Properties dialog box appears.

4. Click **Next**.

5. Select **Rule is Active**.

6. Click **Finish**.

7. In the Enrichment Rules pane, click to save the changes.

Task 3: Deploying the Microsoft Active Directory Discovery Aspect

The Microsoft Active Directory Discovery Aspect enables you to discover Active Directory Domain Controller CIs in your environment. To discover the Active Directory Domain Controller CI on the added managed nodes, you must deploy the Microsoft Active Directory Discovery 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 Configuration Folders pane, select **Configuration Folders** > **Microsoft Application Management** > **Microsoft Active Directory** > **Aspects**.

3. In the Management Templates & Aspects pane, select **Microsoft AD Discovery** and click ![icon] **Assign and Deploy Item**. The Assign and Deploy Item wizard opens.

4. In the **Configuration Item** tab, click the Windows Node CI to which you want to deploy the Discovery Aspect, and then click **Next**.

5. *(Optional).* In the **Required Parameters** tab, click **Next** .

   > **Note:** Microsoft Active Directory Discovery Aspect 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, 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 Active Directory 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 Active Directory Discovery Aspect, you must verify if the CIs are populated in the View Explorer.

To view the CIs populated in the top view, follow these steps:

1. Open the Event Perspective pane:

   On BSM 9.2x, click **Applications > Operations Management > Event Perspective**.

On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.

2. In the Browse Views pane, select the **AD_Logical_View**.

Task 5: Deploying the Microsoft Active Directory Management Templates or Microsoft Active Directory Aspects

If you are using **Monitoring Automation for Composite Applications** license, you can either deploy the Microsoft Active Directory Management Templates or Microsoft Active Directory Aspects to the Domain Controller CIs. If you are using **Monitoring Automation for Servers** license, you can deploy Microsoft Active Directory Aspect.

This section provides information about collection process, deploying management template and aspects. For more information about deploying Microsoft Active Directory Management, go to "Task 5a: Identifying and Deploying Microsoft Active Directory Management Template". For more information about deploying Microsoft Active Directory Aspects, go to "Task 5b: Deploying Microsoft Active Directory Aspects".

Management Pack Data Collection Process

The frequency (polling interval) at which each policy must be monitored is predefined with a default value in a specific frequency parameter. Frequency parameter is an expert parameter that is defined for each of the metrics regardless of whether they are for generating events or not.

Following are the four predefined frequency parameters:

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

After Management Templates and Aspects are deployed, collector is triggered based on the parameter value in a specific policy. You can modify the default value of the parameter at 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 the section *Editing Parameters* in *OMi Management Pack for Microsoft Active Directory User Guide*.

Task 5a: Identifying and Deploying Microsoft Active Directory Management Template

You **must** deploy the Microsoft Active Directory 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 Active Directory Discovery Aspect".

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

- If you want to monitor the basic features of Microsoft Active Directory deployment such as the availability and basic performance of Microsoft Active Directory servers, you can deploy Essential Microsoft Active Directory Management Template.

- If you want to monitor basic feature along with advance features of Microsoft Active Directory deployment such as the in-depth monitoring and advanced performance of Microsoft Active Directory servers, you can deploy Extensive Microsoft Active Directory Management Template.

- If you want to use both agent and agentless monitoring, you can deploy Hybrid Microsoft Active Directory Management Template.

To deploy Microsoft Active Directory Management Template to the Domain Controller 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, select **Configuration Folders** > **Microsoft Application Management** > **Microsoft Active Directory** > **Management Templates**.

3. In the Management Templates & Aspects pane, select the Management Template that you want to deploy, and then click ![icon] **Assign and Deploy Item**. The Assign and Deploy wizard opens.

4. In the **Configuration Item** tab, click the Active Directory Domain Controller CI to which you want to assign the Management Template. Click **Next**.

5. *(Optional).* In the **Required Parameters** tab, click **Next**.

    > **Note:** Microsoft Active Directory Management Templates 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 ![icon]. The Edit Parameter window opens.

    b. Change the default value and 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 ![icon] **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 the **Enable Assignment(s)** check box.

    You can then enable the assignment later using the Assignments & Tuning pane.

8. Click **Finish**.

Task 5b: Deploying Microsoft Active Directory Aspects

You **must** deploy the Microsoft Active Directory 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 Active Directory Discovery Aspect".

To deploy Microsoft Active Directory Aspects to the Domain Controller 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, select **Configuration Folders**> **Microsoft Application Management** > **Microsoft Active Directory** > **Aspects**.

3. In the Management Templates & Aspects pane, select the Aspect you want to deploy, and then click ⚙ **Assign and Deploy Item**. The Assign and Deploy wizard opens.

4. In the **Configuration Item** tab, select the Domain Controller CI to which you want to assign the Aspect and then click **Next**.

5. *(Optional).* In the **Required Parameters** tab, click **Next**.

   > **Note:** Microsoft Active Directory 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

> **Note:** It is recommended to check the Topology Synchronization settings if a Node or a CI is monitored by Operations Manager.

To check the Topology Synchronization settings, 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 contains the packages that are used for topology synchronization. Ensure that you have the package- **default;nodegroups;operations-agent;HPOprSys;HPOprAds** along with the other Topology Sync packages.

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 **default;nodegroups;operations-agent;HPOprSys;HPOprAds** and click **Save**.

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 `HPOprMA_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 `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`

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