



OMi Management Pack for IBM WebSphere Application Server

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 IBM WebSphere Application Server (OMi MP for IBM WebSphere Application Server) works with Operations Manager i (OMi) and enables you to monitor primary and advanced components of IBM WebSphere Application Servers and its underlying infrastructure operating in your environment. The OMi MP for IBM WebSphere Application Server includes the following components for monitoring health and status of IBM WebSphere Application Servers:

- WebSphere Management Templates
- WebSphere Aspects and Policy Templates
- Parameters
- Run-time Service Model (RTSM) Views
- Event Type Indicators (ETIs)
- Health Indicators (HIs)
- Topology Based Event Correlation (TBEC) Rules
- HI Assignments
- Operations Orchestration (OO) Flows
- Key Performance Indicators (KPIs) Assignments
- Graph Templates
- Tools

Note: For more information about the components, see the *OMi Management Pack for IBM WebSphere Application Server 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

Abbreviations	Expansion
OMi MP for IBM WebSphere Application Server	OMi Management Pack for IBM WebSphere Application Server

Related Documentation

For more information about OMi MP for IBM WebSphere Application Server, see the following documents:

- OMi MP for IBM WebSphere Application Server - *Release Notes*
- OMi MP for IBM WebSphere Application 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 IBM WebSphere Application Server

This section provides information about installing OMi MP for IBM WebSphere Application 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 IBM WebSphere Application Server. The OMi MP for IBM WebSphere Application Server is available in the OMi MP for IBM WebSphere Application 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.

Product	Marketplace links
OMi MP for IBM WebSphere Application Server	Unified Marketplace

The OMi MP for IBM WebSphere Application 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	<p>Available in the BSM console Help menu.</p> <p>From the BSM console, go to Help > BSM Help > Application Administration > Operations Management > OMi Management Pack for IBM WebSphere Application Server</p> <p>Available in the OMi console ? menu.</p> <p>From the OMi console, go to ? > General Help > Administration Guide > Management Packs > OMi Management Pack for IBM WebSphere</p>	<p>To provide information about the following:</p> <ul style="list-style-type: none">• Using Management Templates• Using Aspects and Policy Templates• Using Indicators - HIs, ETIs, and TBEC Rules.

Document	Location	Purpose
	Application Server.	
Installation Guide	<MPDVD>\DOCUMENTATION\en	
User Guide	<MPDVD>\DOCUMENTATION\en	
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 hardware and software prerequisites for installing OMi MP for IBM WebSphere Application Server on BSM 9.2x or OMi 10.x (Linux and Windows) Servers.

Software Requirements

Before installing OMi MP for IBM WebSphere Application Server version 1.00, the following components must be installed and configured on the BSM 9.2x or OMi 10.x Servers.

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

Note: To monitor IBM WebSphere Application Servers, Oracle Databases, and the underlying infrastructure elements as a composite application, you must install OMi MP for Oracle Database in addition to OMi MP for IBM WebSphere Application Server and OMi MP for Infrastructure.

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

Managed Node

Component	Version
Operations Agent	11.12 or higher*
JRE	1.6 or higher

Note: * For more information about Support Matrix, see <https://softwaresupport.hpe.com/km/KM323488>.

User Privileges

The user must have the local WebSphere Administrator privileges assigned for the WebSphere Admin Server.

If you are using LDAP directory, you must create a user account similar to the user account of LDAP in the local WebSphere instance and grant Administrator privileges to the user.

Installation Checklist

Make sure 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 <i>General Prerequisites</i> in the <i>BSM Installation Guide</i> .
2	Install BSM version 9.23 or higher	See the <i>Install BSM 9.20 and the Install the latest BSM 9.2x Minor Minor Release and Patch</i> chapters in the <i>BSM Installation Guide</i> .
3	Install Monitoring Automation version 9.23 or higher	See the chapter <i>Installing Monitoring Automation</i> in the <i>Operations Manager i Monitoring Automation Installation Guide</i> .
4	Verify the Monitoring Automation	See the chapter <i>Verifying the Monitoring</i>

Serial	Task	Reference
	installation	<i>Automation Installation and Using Monitoring Automation in the Operations Manager i Monitoring Automation Installation Guide.</i>
5	Install Additional Software Update for Monitoring Automation 9.23 Note: If you are installing OMi MP for IBM WebSphere Application Server 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 <i>Migrating from OMi MP for Infrastructure version 1.00 to version 1.10</i> in the <i>OMi Management Pack for Infrastructure 1.10 Installation Guide</i> .
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 Oracle Database 1.10 (Optional)	See the chapter <i>Installing OMi MP for Oracle Database version 1.10</i> in the <i>OMi Management Pack for Oracle Database Installation Guide</i> .
9	Install OMi MP for IBM WebSphere Application Server 1.00	See the section " Installing OMi Management Pack for IBM WebSphere Application Server version 1.00 on BSM or OMi ".
10	Apply the License	See the section " Applying the License ".

Managed Node

Task	Reference
Install Operations Agent 11.12 or higher	See the chapter <i>Installing the Operations agent 11.12</i> in the <i>Operations Agent and Operations Smart Plug-ins for Infrastructure Installation Guide</i> .
Setting the Performance Monitoring Infrastructure Counters	See the section " Setting the Performance Monitoring Infrastructure (PMI) Counters ".
Delete the default Keystore and Truststore	OMi MP for IBM WebSphere Application Server

Task	Reference
and create new Keystore and Truststore	does not support monitoring of WebSphere Application Server with default SSL password setting. You will encounter an IBM Websphere Admin Client connection error, if default password is retained. See the section " Creating a New KeyStore and Truststore ".
Clear default setting of SSLv3 protocol	OMi MP for IBM WebSphere Application Server does not support monitoring of WebSphere Application Server with SSLv3 enabled. Verify and clear default SSL v3 setting if enabled. For more information, see " Verify Default SSLv3 settings ".

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 IBM WebSphere Application 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](#)".

Setting the Performance Monitoring Infrastructure (PMI) Counters

This section provides information about setting the PMI counters and enabling ConfigProxy MBean for IBM WebSphere Application Servers in the managed nodes.

Task 1: Setting PMI Counters

You must enable the PMI counters before collecting any performance data. The instrumentation level for WebSphere PMI Counters must be set to ALL for the IBM WebSphere Application Server to get all the metrics.

To set the WebSphere PMI Counters, follow these steps:

1. In the WebSphere Admin console, click **Servers > Server Types > WebSphere application servers**.
2. In the Application servers pane, click the **server** link.
The Configuration tab appears.
3. In the **Configuration** tab, click **Performance > Performance Monitoring Infrastructure (PMI)**.
4. In the **Configuration** tab, under General Properties, in the currently monitored statistic set, select **All**.
5. Click **OK**.

Task 2: Enabling ConfigProxy MBean

To discover and monitor jdbc components, you must enable ConfigProxy MBean.

To enable ConfigProxy MBean, follow these steps:

1. In the WebSphere Admin console, click **Servers > Server Types > WebSphere application servers**.
2. In the Application servers pane, click the **server** link.

The Configuration tab appears.

3. In the **Configuration** tab, click **Server Infrastructure > Administration > Administration services > Custom properties**.
4. If the `com.ibm.websphere.management.enableConfigMBean` property exists, perform the following steps and go to [step 6](#) else, go to [step 5](#):
 - a. Click `com.ibm.websphere.management.enableConfigMBean` property.

The Configuration tab appears.
 - b. Set the value to **true**.
5. If the `com.ibm.websphere.management.enableConfigMBean` property does not exist, perform the following steps:
 - a. Click **New**.
 - b. In the **Configuration** tab, under General Properties, specify the name as `com.ibm.websphere.management.enableConfigMBean`.
 - c. Specify the value as **true**.
6. Click **OK**.
7. Restart the WebSphere Application Server.

Creating a New KeyStore and Truststore

OMi MP for IBM WebSphere Application Server does not support monitoring of WebSphere Application Server with default SSL password setting. You will encounter an IBM Websphere Admin Client connection error, if default password is retained. Verify if the default setting and password exists in the SSL keystore and truststore values. If default value exists, then delete values and password. You must create new certificate and assign it to server or cells.

Follow the steps to create keystore and truststore values:

1. Verify if default keystore and truststore value are available for cell and node.
 - a. Open the IBM WebSphere Application Server - Administration Console and expand **Security** tab.
 - b. Select the **SSL certificate and key management**.
 - c. In the **Related Items** list, select **Key stores and certificates**.

- d. Verify if the Keystore and Truststore list does not contain default values that are created during WebSphere installation.
2. If default values exists, then delete the cell and node default keystore and truststore values.

For more information about creating new keystore and truststore values, see *Adding certificates to the WebSphere Application Server truststore and keystore* in documentation for *IBM WebSphere Application Server*.

3. Create new certificate and assign it to the server or cell.
4. Verify if the keystore and truststore have default password.
5. If default password exists, then click **Change Password** to modify the default password.

Note: It is recommended to make note of the new Keystore and Truststore values. You must provide the Keystore and Truststore values while deploying Aspects or Management Templates.

Verfiy Default SSLv3 settings

OMi MP for IBM WebSphere Application Server does not support monitoring of WebSphere Application Server with SSLv3 enabled. You must clear the default settings and select one the following supported portocol. If protocol selected not from the supported list, then IBM WebSphere Server and client program is not established to collect the data.

Supported Protocol	Unsupported Protocol
SSL	SSL_TLS
SSLv2	SSLv3
TLS	SSL_TLSv2
TLSv1	
TLSv1.1	
TLSv1.2	

Follow the steps to set the protocol to one of the supported protocols:

1. Open the IBM WebSphere Application Server - Administration Console and expand **Security** tab.
2. Select the **SSL certificate and key management**.
3. In the **Related Items** list, select **SSL Configurations**.

4. Select a resource from list of administrable resources.
5. In the **Additional Properties**, select the **Quality of protection(QoP) settings**.
6. In the **General Properties**, check if the selected protocol is supported .
7. Change the protocol to one of the protocol listed in the table.

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 MP for Oracle Database version 1.10

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

Installing OMi Management Pack for IBM WebSphere Application Server version 1.00 on BSM or OMi

You can use the e-media or MPDVD to install the OMi MP for IBM WebSphere Application Server on BSM or OMi Server (Linux or Windows). The following section provides information about installing the OMi MP for IBM WebSphere Application 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 IBM WebSphere Application 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 IBM WebSphere Application 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 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 IBM WebSphere Application Server will not be installed.

After the installation is completed, a message appears stating that the installation of OMi Management Pack for IBM WebSphere Application Server is completed.

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

To install the OMi MP for IBM WebSphere Application 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 IBM WebSphere Application 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

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 IBM WebSphere Application Server is completed.

Installing Operations Orchestration (OO) Flows

The OMi MP for IBM WebSphere Application 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 IBM WebSphere Application Server.

Note: The OO flows shipped by OMi MP for IBM WebSphere Application Server 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 IBM WebSphere Application 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 IBM WebSphere Application 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 **HPOprOOJEE90.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>/HPOprOOJEE90" -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://enterpriselicence.hp.com>.

Verifying the OMi MP for IBM WebSphere Application Server Installation

This section provides information about verifying the installation of OMi MP for IBM WebSphere Application 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 IBM WebSphere Application Server 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.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 IBM WebSphere Application 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 IBM WebSphere Application 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 information about monitoring IBM WebSphere Application Servers from the BSM or OMi console.

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

Note: If the WebSphere Application Servers that you want to monitor is already being monitored by Smart Plug-in for WebSphere Application Server (SPI for WebSphere Application Server), then remove the SPI artifacts and datasources from the managed node hosting the WebSphere Application Server before proceeding.


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 9.2x or OMi 10.x console.

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 Filter > Monitored Nodes** and then click  and then select **Computer > Windows** or **Unix**. The Create New Monitored Nodes dialog box appears.
3. Specify the Primary DNS Name, IP Address, Operating System, and Processor Architecture of the node and click **OK**.

Task 2: Enabling the Enrichment Rules

The Enrichment Rules must be enabled to reconcile more than one j2eedomain CI with the same name as a single CI entity. To enable the Enrichment Rules, follow these steps:

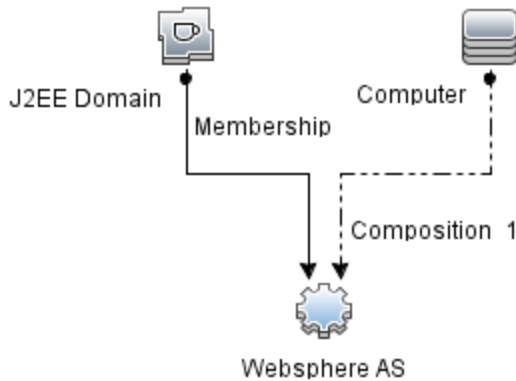
1. Open the Enrichment manager:
On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Enrichment manager**.
On OMi 10.x, click **Administration > RTSM Administration > Modeling > Enrichment manager**.
2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list.
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.
10. In the Enrichment Rules pane, click **Root > Operations Management > J2EE Application Servers**.
11. Select **WebSphereJ2EEDomainReconciliation** and repeat steps 3 to 7.

Task 3: Deploying the WebSphere Discovery Aspect



The WebSphere Discovery Aspect enables you to discover IBM WebSphere Application Server instances in the environment. To discover the IBM WebSphere Application Server CIs on the added managed nodes, you must deploy the WebSphere Discovery Aspect to a Computer CI.

The WebSphere Discovery Aspect deployment discovers the Configuration Item (CIs) of the following CI types (CITs):

- j2eedomain
- websphereas



To deploy the WebSphere Discovery Aspect, 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 > Application Server Management > IBM WebSphere Management > Aspects
3. In the Aspects folder, click **WebSphere Discovery Aspect**, and then click  to open the Assign and Deploy Wizard.
4. In the **Configuration Item** tab, select the configuration item to which you want to deploy the Discovery Aspect and then click **Next**.
The **Required Parameters** tab opens and a message appears stating that there are no parameters that require editing for this Assignment.
5. In the **Required Parameters** tab, click **Next**.
6. *(Optional)*. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, to change the default value of the Frequency of WebSphere_MPllog parameter, you can select the parameter and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, click **Next** to go to the **Configure Options** tab.
8. *(Optional)*. In the **Configure Options** tab, if you do not want to enable the assignment

immediately, follow the step:

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

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

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

9. Click **Finish**.

Note: After the WebSphere Discovery Aspect is deployed, a message stating the Assignment and deployment jobs created appears. To check the status of the deployment job, 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

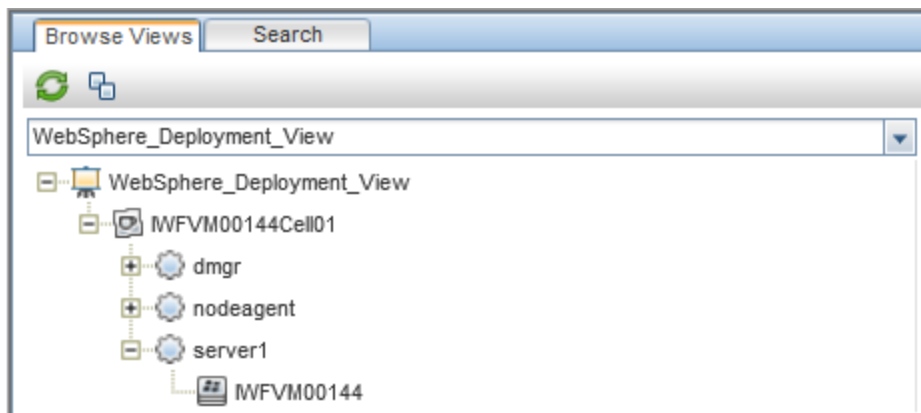
After you deploy the WebSphere Discovery Aspect, you can verify if the CIs are populated in the View Explorer.

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**.

In the View Explorer, select **WebSphere_Deployment_View** from the drop-down list. You can see the CIs associated with the **WebSphere_Deployment_View** as shown in the following figure.



Task 5: Deploying the WebSphere Management Templates or WebSphere Aspects

This section provides information about data collection, deploying management templates and aspects. For more information about deploying WebSphere Management Templates, go to "[Task 5a: Identifying and Deploying WebSphere Management Templates](#)". For more information about deploying WebSphere Aspects, go to "[Task 5b: Deploying WebSphere 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 logging data.

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.

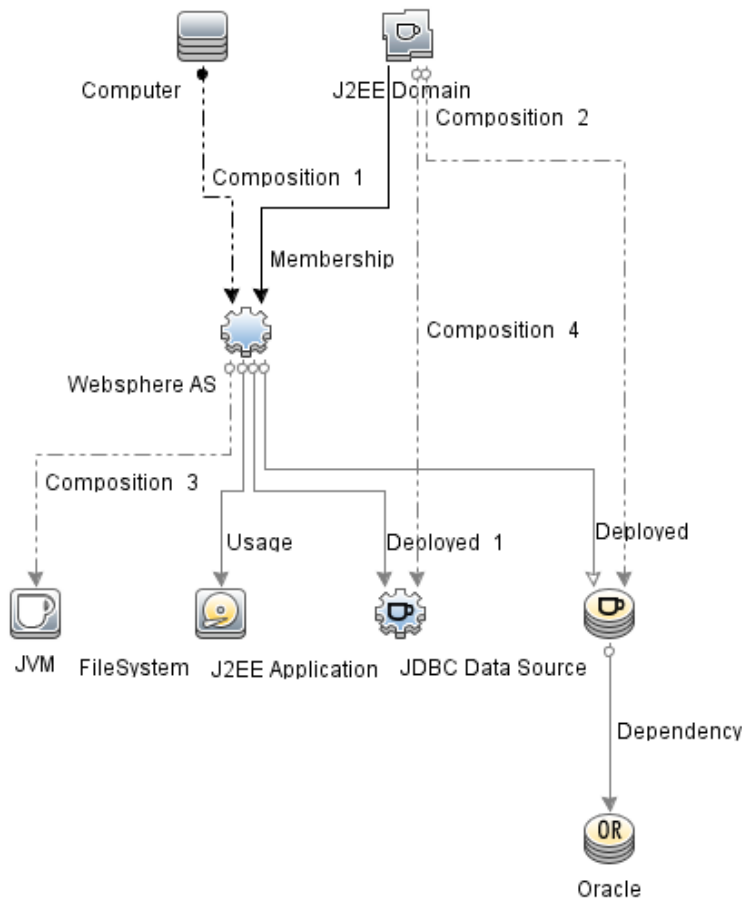
For more information about how to modify the parameter values, see the section *Editing Parameters* in the *OMi Management Pack for IBM WebSphere Application Server 1.00 User Guide*.

Task 5a: Identifying and Deploying WebSphere Management Templates

Before deploying the WebSphere Management Templates, you must deploy the WebSphere Discovery Aspect. For more information, see "[Task 3: Deploying the WebSphere Discovery Aspect](#)".

The WebSphere Management Template discovers the CIs of the following CITs and completes the topology as shown in the following figure:

- JVM
- J2EE Application
- JDBC Data Source



You can identify the WebSphere Management Template suitable for your environment by following these recommendations:

- If you want to monitor the primary areas of IBM WebSphere Application Server such as server status, JVM, JDBC, EJB and Servlets, and server logs, you can deploy the Essential WebSphere Management Template.
- If you want to monitor the primary and advanced areas of IBM WebSphere Application Server such as transactions, cluster status cache usage, and threads, you can deploy the Extensive WebSphere Management Template.
- If you want to monitor composite applications comprising IBM WebSphere Application Servers, Oracle databases, and the underlying infrastructure, you can deploy the Extensive WebSphere and Oracle Database Management Template.

To deploy the WebSphere Management Templates to the WebSphere cell CIs (j2eedomain), 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 > Application Server Management > IBM WebSphere Management > Management Templates

3. In the 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 j2ee Domain CI to which you want to assign the Management Template, and then click **Next**. You can select multiple items by holding down the **CTRL** or **SHIFT** key while selecting them. Click **Next** to accept the CIs and go to **Required Parameters**.
5. In the **Required Parameters** tab, you must specify the values of all the parameters that are listed (Username and Password). To specify the values of the parameters, you can select the parameter and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

Note: You must specify values for all the parameters to be able to continue the configuration process.

Note: The credentials given during the deployment of a Management Template should have required privileges. For more information see the section [User Privileges](#).

6. Click **Next**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** on OMi 10.x, you can override the default value of any parameters. 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**.

Note: If the protocol configured for data collection is JSR160RMI, the values for the parameters (WebSphere Application Server JMX Connector Type and WebSphere Application Server Port Number) must be specified.

8. Click **Next**.
9. (*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 **Enable Assignment(s)** check box.

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

10. Click **Finish**.

Task 5b: Deploying WebSphere Aspects

Before deploying the WebSphere Aspects, you must deploy the WebSphere Base Aspect to discover the CIs of the following CITs:

- JVM
- J2EE Application
- JDBC Data Source

To deploy the WebSphere Base Aspect, 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 > Application Server Management > IBM WebSphere Management > Aspects > WebSphere Base**


3. In the Aspects folder, click the **WebSphere Base**, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, Select the WebSphere CI and then click **Next**. You can select multiple items by holding down the **CTRL** or **SHIFT** key while selecting them. Click **Next** to accept the CIs and go to **Required Parameters**.

Note: If you want to deploy Aspects to Node CIs, select **Also Show CIs of type Node**.

5. In the **Required Parameters** tab, you must specify the values of all the parameters that are listed (Username and Password). To specify the values of the parameters, you can select the parameter and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

Note: You must specify values for all the parameters to be able to continue the configuration process.

Note: The credentials given during the deployment of a Management Template should have required privileges for OMi MP for IBM WebSphere Application Server to collect performance management data.

6. Click **Next**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can override the default value 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**.

Note: If the protocol configured for data collection is JSR160RMI, the values for the parameters (WebSphere Application Server JMX Connector Type and WebSphere Application Server Port Number) must be specified.

8. Click **Next**
9. *(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.

10. Click **Finish**.

To deploy the remaining WebSphere Aspects, follow these steps:


1. Open the Management Templates & Aspects pane:

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


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

2. In the Configuration Folders pane:

Configuration Folders > Application Server Management > IBM WebSphere Management > Aspects

3. In the Aspects folder, click the WebSphere Aspect that you want to deploy, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, click the CI to which you want to assign the WebSphere Aspect, and then click **Next**. You can select multiple items by holding down the **CTRL** or **SHIFT** key while selecting them. Click **Next** to accept the CIs and go to **Required Parameters**.

Note: If you want to deploy Aspects to Node CIs, select **Also Show CIs of type Node**.

5. In the **Required Parameters** tab, you must specify the values of all the parameters that are listed (Username and Password). To specify the values of the parameters, you can select the parameter and then click . The Edit Parameter dialog box opens. Click **Value**, specify the value, and then click **OK**.

Note: You must specify values for all the parameters to be able to continue the configuration process.

Note: The credentials given during the deployment of WebSphere Aspects should have required privileges. For more information see the section [User Privileges](#).

6. Click **Next**.

Note: If the protocol configured for data collection is JSR160RMI, the values for the parameters (WebSphere Application Server JMX Connector Type and WebSphere Application Server Port Number) must be specified.

7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, you can

override the default value 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**.

Note: If the protocol configured for data collection is JSR160RMI, the values for the parameters (WebSphere Application Server JMX Connector Type and WebSphere Application Server Port Number) must be specified.

8. Click **Next**.
9. (*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.
10. Click **Finish**.

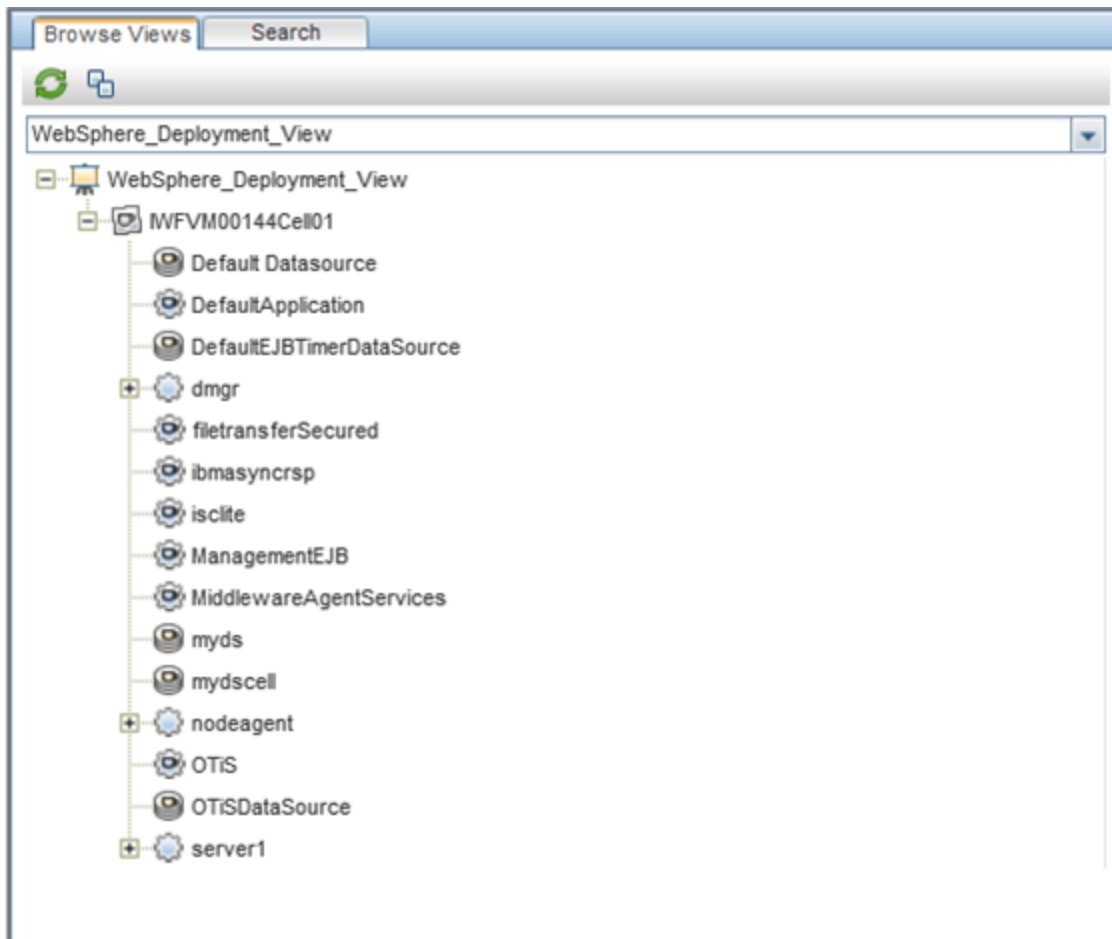
Task 6: Verifying Discovery for Extended Topology

After you deploy the WebSphere Management Templates or WebSphere Base Aspect, you can verify if the CIs are populated in the View Explorer.

To view the CIs in the View Explorer, 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 View Explorer, select **WebSphere_Deployment_View** from the drop-down list. You can see the extended topology comprising CIs associated with the **WebSphere_Deployment_View**


as shown in the following figure.



Checking the Topology Synchronization Settings

Note: It is recommended to check the Topology Synchronization settings if a node or a Configuration Item (CI) is monitored by Operations Manager.

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 manager, select **Applications > Operations Management**.

3. In the Operations Management - HPOM Topology Synchronization Settings, verify if Packages for Topology Sync row contains the packages that are used for topology synchronization. In addition to other packages, make sure that you have the **default;nodegroups;operations-agent;HPOprSys;HPOprJEE** 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;HPOprJEE** 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 `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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