



OMi Management Pack for IBM WebSphere Application Server

Software Version: 1.01
Operations Manager i for Linux and Windows® operating systems

Installation Guide

Document Release Date: June 2017
Software Release Date: June 2015


Hewlett Packard
Enterprise

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from Hewlett Packard Enterprise required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© 2014 - 2017 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft group of companies.

UNIX® is a registered trademark of The Open Group.

Documentation Updates

To check for recent updates or to verify that you are using the most recent edition of a document, go to: <https://softwaresupport.hpe.com/>.

This site requires that you register for an HPE Passport and to sign in. To register for an HPE Passport ID, click **Register** on the HPE Software Support site or click **Create an Account** on the HPE Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HPE sales representative for details.

Support

Visit the HPE Software Support site at: <https://softwaresupport.hpe.com/>.

Most of the support areas require that you register as an HPE Passport user and to sign in. Many also require a support contract. To register for an HPE Passport ID, click **Register** on the HPE Support site or click **Create an Account** on the HPE Passport login page.

To find more information about access levels, go to: <https://softwaresupport.hpe.com/web/softwaresupport/access-levels>.

HPE Software Solutions Now accesses the Solution and Integration Portal website. This site enables you to explore HPE product solutions to meet your business needs, includes a full list of integrations between HPE products, as well as a listing of ITIL processes. The URL for this website is <https://softwaresupport.hpe.com/km/KM01702731>.

Contents

Chapter 1: Introduction	5
Abbreviations Used in this Manual	5
Related Documentation	5
Licensing	6
Chapter 2: Installing or Upgrading OMi MP for IBM WebSphere Application Server	7
Installation Package	7
Installation Prerequisites	8
Software Requirements	8
User Privileges	10
Installation Checklist	10
Installing Additional Software Update for Monitoring Automation 9.23	12
Installing OMi MP for Infrastructure version 1.10	12
Installing OMi MP for Oracle Database version 1.10	12
Installing OMi Management Pack for IBM WebSphere Application Server version 1.0	13
On a Linux BSM 9.2x or OMi 10.x Server	13
On a Windows BSM 9.2x or OMi 10.x Server	15
Installing OMi MP for IBM WebSphere Application Server 1.01	16
Verifying the OMi MP for IBM WebSphere Application Server 1.01 Installation	17
Installing Operations Orchestration (OO) Flows	18
Uploading OO Flows	19
Applying the License	19
Increasing Timeout for Log File monitoring	20
Configuring Library Path on a Solaris Managed Node	20
Setting the Performance Monitoring Infrastructure (PMI) Counters	22
Chapter 3: Getting Started	24
Task 1: Adding Nodes to BSM 9.2x or OMi 10.x Console	24
Task 2: Enabling the Enrichment Rules	25
Task 3: Deploying the WebSphere Discovery Aspect	26

Task 4: Verifying Discovery	27
Task 5: Deploying the WebSphere Management Templates or WebSphere Aspects	28
Management Pack Data Collection Process	28
Task 5a: Identifying and Deploying WebSphere Management Templates	29
Task 5b: Deploying WebSphere Aspects	32
Task 6: Verifying Discovery for Extended Topology	34
Additional tasks for OMi MP for IBM WebSphere Application Server 1.01 ...	35
Checking the Topology Synchronization Settings	38
Appendix A: Installing Additional BSM Software Update	39
Installing Additional Software Update on BSM DPS	39
Installing Additional Software Update on BSM GWS	41
Installing Additional Software Update in a Typical BSM Environment	42
Send documentation feedback	45

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.

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
BSM	Business Service Management
OMi	Operations Manager i
RTSM	Run-time Service Model
MPDVD	OMi Management Pack for IBM WebSphere Application Server DVD
BSM DPS	BSM Data Processing Server
BSM GWS	BSM Gateway Server
OMi MP	OMi Management Pack
OMi MP for IBM WebSphere Application Server	OMi Management Pack for IBM WebSphere Application Server

Related Documentation

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

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

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 SQL Server, 10 licenses of OMi MP for Oracle Database with any other combination of supported applications.

There are three types of licenses:

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

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

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

Chapter 2: Installing or Upgrading OMi MP for IBM WebSphere Application Server

This section provides information about installing OMi MP for IBM WebSphere Application Server on BSM 9.2x and OMi 10.x (Linux or Windows) Servers.

Installation Package

The following section provides information about the installation package for OMi MP for IBM WebSphere Application Server 1.01.

Note: You must install OMi MP for IBM WebSphere Application Server 1.00, from the MPDVD or e-media, before installing OMi MP for IBM WebSphere Application Server 1.01. The MPDVD and e-media are available for English and Non-English locale environments. You can use the appropriate installation media based on your locale requirements. In a distributed environment, it must be installed on all BSM 9.2x or OMi 10.x - Data Processing Servers (DPS) and BSM 9.2x or OMi 10.x - Gateway Servers (GWS).

The OMi MP for IBM WebSphere Application Server 1.01 is available at the [Unified Marketplace](#).

The package contains the OMi MP for IBM WebSphere Application Server 1.01 update and the product documentation. In a distributed environment, you must install the package on all the BSM 9.2x or OMi 10.x - GWS and BSM 9.2x or OMi 10.x - DPS.

The following table provides information about the documentation available:

Document	Location	Purpose
Installation Guide	Unified Marketplace	Installation instructions
Release Notes		To provide information about the following: <ul style="list-style-type: none">• New features in this release• Installation Notes

Document	Location	Purpose
User Guide	Unified Marketplace	To provide information about the following: <ul style="list-style-type: none"> Using WebSphere Management Templates, Aspects and Policy Templates Using Indicators - HIs and ETIs
Online Help	<p>On BSM 9.2x 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>On OMi 10.x console  menu.</p> <p>From the OMi console, go to  > General Help > Administration Guide > Management Packs > OMi Management Pack for IBM WebSphere Application Server.</p>	

Note: These documents may have been updated with important corrections or additional information after it was packaged with the installation files. Before you start the installation or upgrade, download the latest version of this guide from the Software Search web site: <https://softwaresupport.hpe.com/group/softwaresupport/search-result?keyword=>.

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 1.01, the following components must be installed and configured.

Server Requirement

Component	Version
BSM	9.23 or higher*

Component	Version
Monitoring Automation	9.23 or higher*
Operations Manager i	9.23 or higher*
OMi Management Pack for Infrastructure	1.10 or higher*
OMi Management Pack for Oracle Database (Optional)	1.10
OMi Management Pack for IBM WebSphere Application Server	1.00

For more information about installing the OMi Management Pack for IBM WebSphere Application Server 1.00, see the section "[Installing OMi Management Pack for IBM WebSphere Application Server version 1.0](#)".

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

If you are planning for upgrade to BSM 9.25, you must additionally install the **BSM 9.25 patch for OMi Management Pack** after installing OMi Management Pack for IBM WebSphere Application Server 1.00. In a distributed BSM environment, install the **BSM 9.25 patch for OMi Management Pack** only on the Gateway Server.

Note: To monitor IBM WebSphere Application Servers, Oracle Databases, and the underlying infrastructure elements as a composite application, you must install OMi Management Pack for Oracle Database 1.10 in addition to OMi MP for IBM WebSphere Application Server and OMi Management Pack for Infrastructure.

Managed Node Requirement

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

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

Management Server

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 installation	See the chapter <i>Verifying the Monitoring Automation Installation and Using Monitoring Automation</i> in the <i>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 ".

Serial	Task	Reference
6	Clean up OMi Management Pack for Infrastructure version 1.00	If OMi Management Pack for Infrastructure 1.00 is already installed, see the section <i>Removing OMi MP for Infrastructure version 1.00</i> in the <i>OMi Management Pack for Infrastructure 1.10 Installation Guide</i> .
7	Install OMi Management Pack for Infrastructure 1.10	See the section <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 Management Pack for Oracle Database 1.10 (Optional)	See the section <i>Installing OMi MP for Oracle Database version 1.10</i> in the <i>OMi Management Pack for Oracle Database 1.10 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 1.0 ".
10	Install OMi MP for IBM WebSphere Application Server 1.01	See the section " Installing OMi MP for IBM WebSphere Application Server 1.01 ".
11	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> .
Increase the timeout for Log file monitoring	See the section " Increasing Timeout for Log File monitoring ".
Configure library path on the managed node*	See the section " Configuring Library Path on a Solaris Managed Node ".
Setting the Performance Monitoring Infrastructure Counters	See the section " Setting the Performance Monitoring Infrastructure (PMI) Counters ".
Delete the default Keystore and Truststore and create 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. See the section Creating a New KeyStore and Truststore .

Task	Reference
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 .

* This configuration check is applicable only for the Solaris managed nodes.

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 OMi MP for IBM WebSphere Application Server 1.00 - MPDVD or e-media, under the folder HPOprMA_update.

For more information about installing the update, see [Appendix A](#).

Installing OMi MP for Infrastructure version 1.10

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

Oracle Database Installation Guide.

Installing OMi Management Pack for IBM WebSphere Application Server version 1.0

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.

If OMi MP for IBM WebSphere Application Server 1.00 is already installed, you can skip to section ["Installing OMi MP for IBM WebSphere Application Server 1.01"](#).

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 9.2x or OMi 10.x Servers - BSM 9.2x or OMi 10.x DPS and BSM 9.2x or OMi 10.x GWS.

For BSM 9.2x, you must ensure that Monitoring Automation is running before proceeding with the installation. To check the status, log on to BSM 9.2x 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

Follow these steps:

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

For example: `mkdir /dvdrom`

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

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

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

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

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

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

E-media	MP locale same as BSM locale	MP locale different from BSM locale
English DVD	<code>./mpinstall.sh -i</code>	<code>./mpinstall.sh -i</code>
Non-English DVD	<code>./mpinstall.sh -i</code>	<code>./mpinstall.sh -i -locale <mplocale></code>

For example, to install OMi MP for IBM WebSphere Application Server in the Simplified Chinese locale with BSM 9.2x or OMi 10.x in a non Simplified Chinese locale, specify the following command:

```
<PATH>/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 OMi Management Pack Installation Finished.

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 /nologo mpinstall.vbs -i
```

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

E-media	MP locale same as BSM locale	MP locale different from BSM locale
English e-media	cscript /nologo mpinstall.vbs -i	cscript /nologo 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 OMi Management Pack Installation Finished.

Installing OMi MP for IBM WebSphere Application Server 1.01

This section provides information about installing OMi MP for IBM WebSphere Application Server 1.01 on BSM 9.2x or OMi 10.x (Windows or Linux) Servers respectively.

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

To download and install the OMi MP for IBM WebSphere Application Server 1.01 update, follow these steps:

1. Download and extract the **OMi MP for IBM WebSphere Application Server Update 01.01** to a *Temp* folder from the following location:

[Unified Marketplace](#)

2. To install follow these steps:

- o **On Windows:**

Change the directory to the extracted package folder and run the following command:

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

- o **On Linux:**

Login as a root user and navigate to extracted location and run the following command:

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

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 OMi Management Pack Installation Finished.

Verifying the OMi MP for IBM WebSphere Application Server 1.01 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 BSM 9.2x or OMi 10.x DPS servers at the following locations:

For Linux:

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

For Windows:

`%TOPAZ_HOME%\log\mpinstall.log`

Note: The OMi logs are available BSM 9.2x or OMi 10.x DPS at the following location:

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

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

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

The **OMi Management Pack for IBM WebSphere Application Server 1.01** 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 1.01** must appear in the Content Pack Definitions pane.

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

For Linux:

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

For Windows:

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

The command gives the following output:

```
OMi_Management_Pack_For_IBM_WebSphere_Application_Server (1.01)
```

- The version number of OMi MP for IBM WebSphere Application Server is 1.01, whereas the version number of Management Templates, Aspects, and Policy Templates is 1.00.

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 Orchestration Integration Guide* or *OMi - Operations Orchestration 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 the **HP0prOOJEE90.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>/HP0prOOJEE90" -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>.

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

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

Increasing Timeout for Log File monitoring

To increase the timeout:

1. Set the log file encapsulator timeout in Agent Configuration

```
ovconfchg -ns eaagt -set OPC_LE_CMD_WAIT_TIME 300
```

2. Restart the Operations Agent running the following command:

```
ovc -kill
```

```
opcagt -cleanstart
```

Configuring Library Path on a Solaris Managed Node

This section provides information about configuring the library path on Solaris managed node.

Note: The following configuration is a prerequisite only when the OMi MP for IBM WebSphere Application Server is used for monitoring a Solaris managed nodes.

For OMi MP for IBM WebSphere Application Server to monitor managed nodes on Solaris platform, ensure the `Expat.so` library used for XML parser perl module is able to resolve dynamic dependency for all the required libraries using following steps as agent user:

1. To find `Expat.so` library, run the following commands:

```
cd /opt/OV/nonOV/perl/a/lib
```

```
find . -name Expat.so
```

2. To find the list of dynamic dependencies, run the following commands:

```
Go to <Expat.so> path
```

```
ldd Expat.so
```

If you see the error message “file not found” for `libgcc_s.so`, configure the `libgcc_s.so` library path at `MPLD_LIBRARY_PATH` environment variable on a Solaris managed node by following step 3.

3. Set `libgcc_s.so` library path in `MPLD_LIBRARY_PATH` environment variable as root user by following these steps:

- a. Find the `libgcc_s.so` on a Solaris managed node using the following command:

```
find / -name libgcc_s.so
```

- b. Search `libgcc_s.so` using the following command:

```
file <libgcc_s.so along with path>
```

- c. If `libgcc_s.so` is not installed on the node, install the GCC Runtime libraries package.

4. Open `/etc/profile` in `vi` editor using the following command:

```
vi /etc/profile
```

5. Add the following lines `/etc/profile` file:

```
MPLD_LIBRARY_PATH=<libgcc_s.so path>
```

```
export MPLD_LIBRARY_PATH
```

Note: `libgcc_s.so path` is the result of step 3(a).

6. Set the `libgcc_s.so` library path in Agent configuration

```
/opt/OV/bin/ovconfchg -ns ctrl.env -set MPLD_LIBRARY_PATH <libgcc_s.so path>
```

Note: `libgcc_s.so path` is the result of step 3(a).

7. Save the file.

8. Restart the Operations Agent running the following command:

```
/opt/OV/bin/ovc -kill
```

```
/opt/OV/bin/opcagt -cleanstart
```

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

Note: It is recommended to use Java Virtual Machine Tool Interface (JVMTI) and thread states from the JVM to collect the data for garbage collection and to run the application server respectively. When JVMTI is enabled, a collection of JVMTI-specific statistics can be enabled through the predefined All statistic set.

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.

Chapter 3: Getting Started

The following section provides step-by-step information about monitoring the IBM WebSphere Application Servers from the BSM 9.2x or OMi 10.x console.

If you have already installed the OMi MP for IBM WebSphere Application Server 1.00 and deployed WebSphere Management Templates and Aspects, then after installing OMi MP for IBM WebSphere Application Server 1.01 perform the tasks mentioned in section "[Additional tasks for OMi MP for IBM WebSphere Application Server 1.01](#)".

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.

1. Open the Monitored Nodes pane from 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 > <select the OS Type>**. 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

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

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

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:

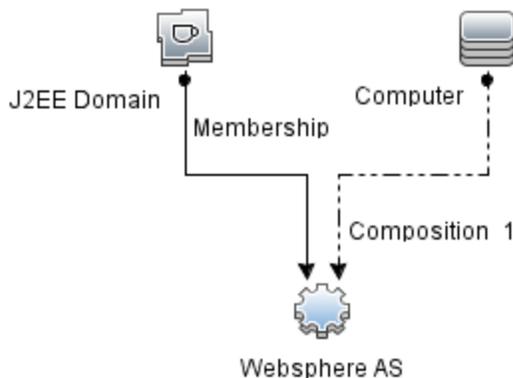
1. Open the Enrichment manager:
On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Enrichment manager**.
On OMi 10.x, click **Administration > RTSM Administration > Modeling > Enrichment manager**.
2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list.
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:

Click **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, follow the steps:
 - a. Select the parameter and then click . The Edit Parameter dialog box opens.
 - b. Click **Value**, specify the value.
 - c. Click **OK**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, click **Next**.
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 the **Enable Assignment(s)** check box.

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 the **WebSphere_Deployment_View** from the drop-down list. You can see the CIs associated with the **WebSphere_Deployment_View**.

Task 5: Deploying the WebSphere Management Templates or WebSphere Aspects

If you are using the **Monitoring Automation for Composite Applications** license, you can either deploy WebSphere Management Templates to the j2eedomain CI or WebSphere Aspects to the websphereas CI. 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](#)".

If you are using the **Monitoring Automation for Servers** license, you can deploy WebSphere Aspects. 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 Aspect 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 Aspect. You can modify the default value of the parameter at following two levels:

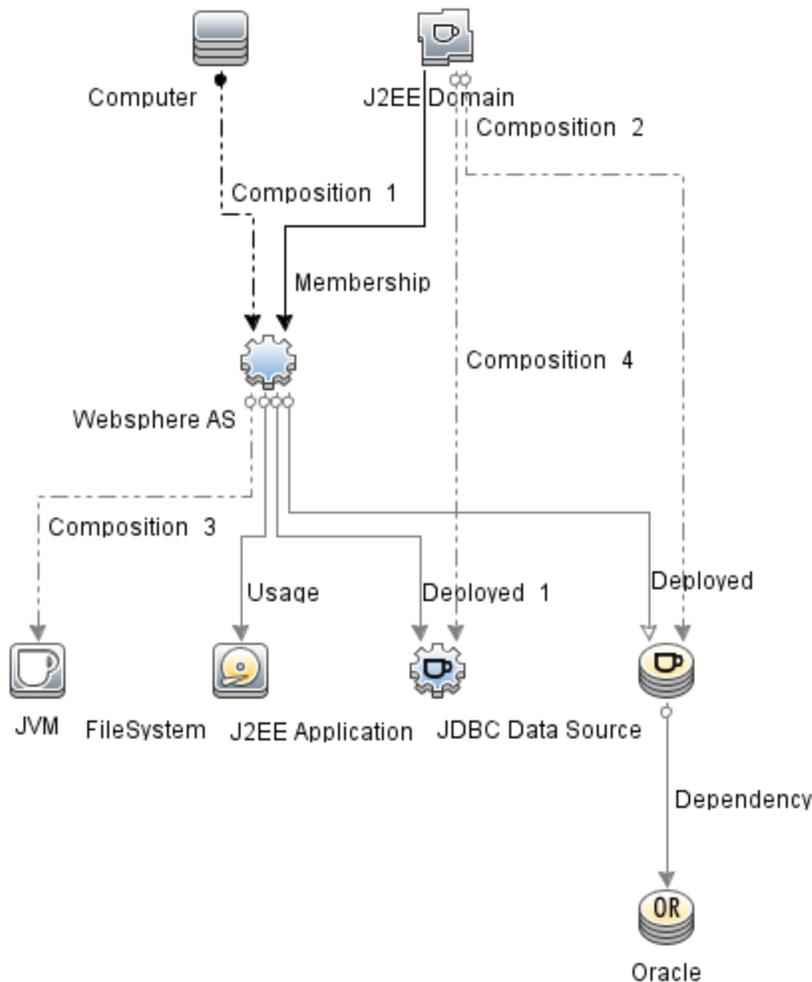
- During deployment of the Management Template or Aspects using the Management Templates & Aspects pane
- After deployment using the Assignments & Tuning pane.

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, follow the steps:
 - a. Select the parameter and then click . The Edit Parameter dialog box opens.
 - b. Click **Value**, specify the value.
 - c. 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 view 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 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 Aspect, 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**.

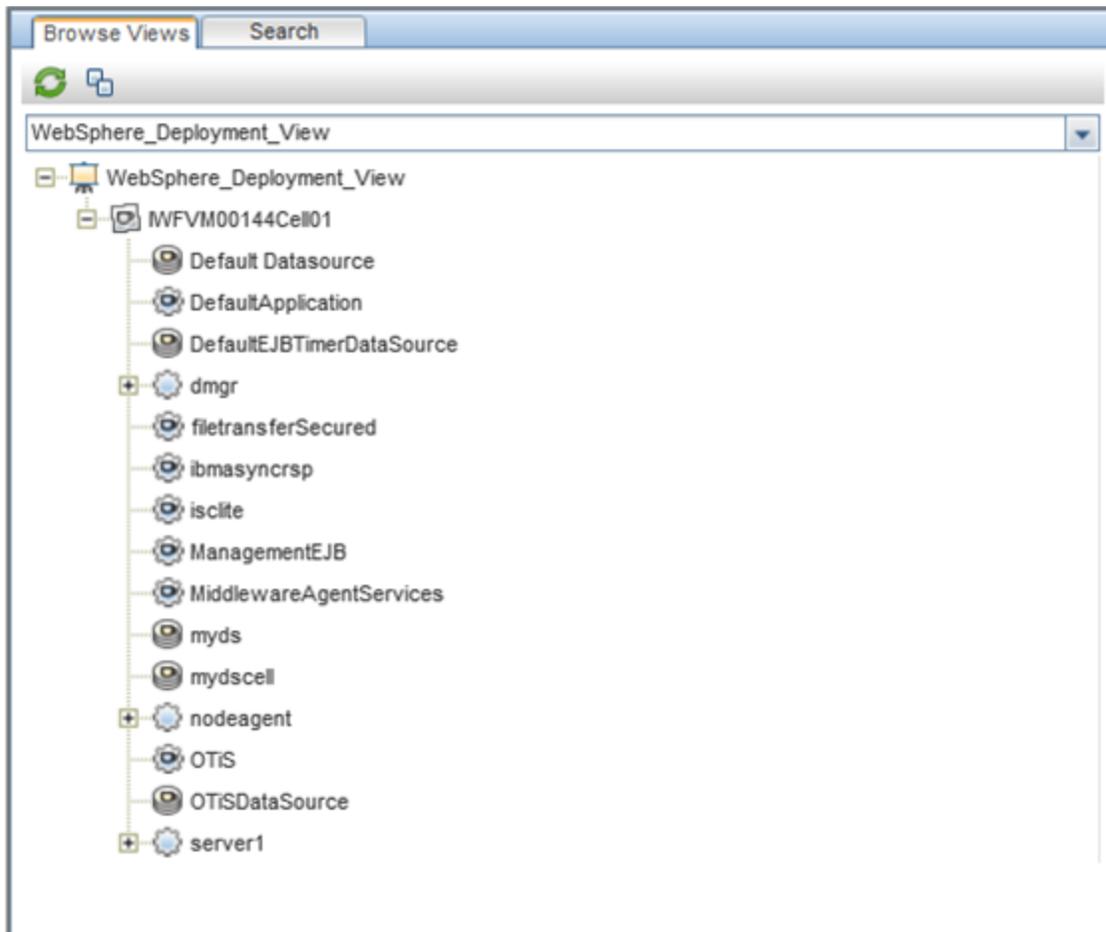
Task 6: Verifying Discovery for Extended Topology

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.



Additional tasks for OMi MP for IBM WebSphere Application Server 1.01

You must perform the following tasks, if OMi MP for IBM WebSphere Application Server 1.00 is used for monitoring the WebSphere Application Server instances in your environment. You must stop the monitoring, update the Management Templates and Aspects to latest version and then restart monitoring.

Perform following steps:

1. Stop monitoring all the WebSphere instances by following the steps:
 - a. Open the Event Perspective pane:

On BSM 9.2x, click **Application > Operations Management > Event Perspective > View Explorer > Browse Views**.

On OMi 10.x, click **Workspaces > Event Perspective > View Explorer > Browse Views**.
 - b. In the **Browse Views** tab, Select the **WebSphere_Deployment_View** from the drop-down list.
 - c. Right-click a WebSphere node and click **Launch Tool**. The Preview Tool Execution page opens.
 - d. Select the **Stop WebSphere Monitoring** tool and click **Run Tool**.

Note: You must run the **Stop WebSphere Monitoring** tool on each node CI.

2. On the managed node, perform the following steps:
 - a. Navigate to the location `<OvDataDir>/conf/WebSphere/wbsjmx` and delete the file `WebSphere_Config.collConfig`.
 - b. Delete the directory `<OvDataDir>/tmp/WebSphere`.
3. To update Management Templates or Aspects to the latest version, perform the following steps for each Management Template or Aspect assignment on each node:

Note: You must deploy WebSphere Management Templates to the **J2EE Domain CI** or WebSphere Aspects to **WebSphere AS CI**.

- a. On BSM 9.2x, to update perform the following steps:
 - i. Open the Management Template & Aspects pane:

Admin > Operations Management > Monitoring > Management Templates & Aspects.
 - ii. In the Configuration Folders pane:

Configuration Folders > Application Server Management > IBM WebSphere Management
 - iii. To deploy the latest version of Essential WebSphere Management Template:

In the Management Templates & Aspects pane, expand the **Essential WebSphere Management Template** and select **1.100** version and click  **Assign and Deploy Item**.

Similarly, you can select the 1.100 version of the required Management Template or Aspects and click .

b. On OMi 10.x, to update perform the following steps:

i. Open the Assignments & Tuning pane:

Administration > Monitoring > Assignments & Tuning

ii. In the Browse Views pane, select the **WebSphere_Deployment_View** view and select each CI where version update is required.

iii. Click  **Show Assignments That Require an Update**.

All the Management Templates and Aspects that requires an update are listed.

iv. Select each of the Management Templates and Aspects and click  **Update Assigned Item**.

The Update Assigned Item dialog box appears.

v. In the **Update Options** tab, follow these steps:

- Select the latest version from the **Update to Version** drop down list.
- If you select **Use parameter values from existing assignments**, only the new mandatory parameters that do not have a default value are listed.
- If you select **Use default parameter values from version selected above**, all mandatory parameters from the selected Management Template or Aspect version that do not have a default value are displayed. These parameters must be edited before proceeding to the next step of the wizard.

vi. Click **Next**.

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

The Edit Parameter dialog opens.

vii. Click **Next** to go to **Parameter Summary** tab.

viii. Click **Finish** to save the changes and close the wizard. The assigned item is updated to the specified Management Template or Aspect version.

4. 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**.

If the deployment fails, remove the failed Deployment Jobs and re-deploy.

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 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, Packages for Topology Sync contains the packages that are used for topology synchronization. In addition to other packages, ensure 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 Additional BSM Software Update

This section provides detailed information about installing the 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.

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

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

On Linux:

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

On Windows:

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

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

On Linux:

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

On Windows:

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

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

On Linux:

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

On Windows:

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

Installing Additional Software Update in a Typical BSM Environment

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

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

On Linux:

```
cd /opt/HP/BSM/opr/webapps
```

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

On Windows:

Go to the drive where BSM is installed:

```
cd /d %TOPAZ_HOME%\opr\webapps
```

```
cscript %TOPAZ_HOME%\opr\support\what.vbs opr-config-server.war
```

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

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

On Linux:

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

On Windows:

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

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

On Linux:

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

On Windows:

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

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

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

On Linux:

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

On Windows:

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

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

On Linux:

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

On Windows:

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

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

On Linux:

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

On Windows:

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

Send documentation feedback

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Installation Guide (OMi Management Pack for IBM WebSphere Application Server 1.01)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to docfeedback@hpe.com.

We appreciate your feedback!