



OMi Management Pack for Hadoop

Software Version: 1.10

Operations Manager i for Linux and Windows® operating systems

Installation Guide

Document Release Date: June 2017

Software Release Date: May 2014



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

© 2013-2017 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft, Encarta, MSN, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

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	6
Licensing	6
Chapter 2: Installing or Upgrading OMi MP for Hadoop	7
Installation Media	7
Installation Prerequisites	8
Software Requirements	8
Monitoring Prerequisites	9
Installation Checklist	10
Installing Additional Software Update for Monitoring Automation 9.23	12
Installing OMi Management Pack for Hadoop version 1.10 on BSM or OMi	12
On a Linux BSM 9.2x or OMi 10.x Server	13
On a Windows BSM 9.2x or OMi 10.x Server	14
Upgrading from OMi MP for Hadoop version 1.00 to 1.10	15
Upgrade Guidelines	15
Prerequisites	16
Upgrading to OMi MP for Hadoop version 1.10	16
Task 1: Upgrade from OMi MP for Hadoop version 1.00 to 1.10	16
Task 2: Backup CODA database on the managed node	16
Task 3: Stop monitoring on all the managed nodes	17
Task 4: Delete the CODA data source created by OMi MP for Hadoop version 1.00	17
Task 5: Undeploy Hadoop Management Template or Hadoop Aspects	18
Task 6: Re-deploy Hadoop Discovery Aspect from OMi MP for Hadoop version 1.10 to all Nodes	18
Task 7: Re-deploy selected assignments using Assignments & Tuning	18
Task 8: Deploy the Hadoop Management Templates or Hadoop Aspects	19

Task 9: Re-deploy selected assignments	19
Applying the License	20
Verifying the OMi MP for Hadoop Installation or Upgrade	20
Chapter 3: Getting Started	22
Task 1: Adding Nodes to the BSM 9.2x or OMi 10.x console	22
Task 2: Enabling the Enrichment Rules	22
Task 3: Deploying the Hadoop Discovery Aspect	23
Task 4: Verifying Discovery	24
Task 5: Deploying Management Template or Aspects	24
Management Pack Data Collection Process	25
Task 5a: Deploying Essential Hadoop Management Template	25
Task 5b: Deploying Hadoop Aspects	27
Appendix A: Installing Monitoring Automation 9.23 Software Update	29
Installing Additional Software Update in a Distributed BSM Environment	29
Installing Additional Software Update on BSM DPS	29
Installing Additional Software Update on BSM GWS	31
Installing Additional Software Update in a Typical BSM Environment	32
Send documentation feedback	35

Chapter 1: Introduction

The OMi Management Pack for Hadoop (OMi MP for Hadoop) works with Operations Manager i (OMi) and enables you to monitor Hadoop environments and underlying infrastructure. The OMi MP for Hadoop includes the following components for monitoring the health and status of Hadoop.

Note: For more information about the components, see the OMi MP for Hadoop *Online Help or User Guide*.

- Hadoop Management Templates
- Hadoop Aspects and Policy Templates
- Parameters
- Run-time Service Model (RTSM) Views
- Health Indicators (HIs)
- Event Type Indicators (ETIs)
- Dashboard for Hadoop
- Tool
- Graphs

Abbreviations Used in this Manual

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

Related Documentation

For more information about OMi MP for Hadoop, see the following documents:

- OMi MP for Hadoop - *Release Notes*
- OMi MP for Hadoop - *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 or Upgrading OMi MP for Hadoop

This section provides information about installing OMi MP for Hadoop 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 Hadoop. The OMi MP for Hadoop is available in the OMi MP for Hadoop DVD (MPDVD) and also through electronic media (e-media). The MPDVD and e-media are available for English and Non-English locale environments. You can use the appropriate installation media based on your locale requirements. The MPDVD and e-media are available for English locale environments.

Product	Marketplace links
OMi MP for Hadoop	Unified Marketplace

The OMi MP for Hadoop DVD and e-media contains the software and the product documentation. In a distributed environment, it must be installed on all BSM or OMi Data Processing Servers (DPS) and BSM or OMi Gateway Servers (GWS).

The following table provides information about the documentation available in the MPDVD and the e-media:

Document	Location	Purpose
Online Help	Available in the BSM console Help menu. From the BSM console, go to Help > BSM Help > Application Administration > Operations Management > OMi Management Pack for Hadoop Available in the OMi console ? menu. From the OMi console, go to ? > General Help > Administration Guide > Management Packs > OMi Management Pack for Hadoop.	To provide information about the following: <ul style="list-style-type: none">• Using Hadoop Management Templates• Using Hadoop Aspects and Policy Templates• Using Indicators - HIs and ETIs

Document	Location	Purpose
Installation Guide	<MPDVD>\DOCUMENTATION\en	
User Guide	<MPDVD>\DOCUMENTATION\en	
Release Notes	<MPDVD>\DOCUMENTATION\en	

Installation Prerequisites

The following section lists the hardware and software prerequisites for installing OMi MP for Hadoop on BSM 9.2x or OMi 10.x (Linux and Windows) Servers. It also provides information about the prerequisites required for monitoring Hadoop.

Software Requirements

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

Server Requirement

Component	Version
BSM	9.23 or higher*
Operations Manager i	9.23 or higher*
Monitoring Automation	9.23 or higher*
RTSM	9.05 CP 11
OMi MP for Infrastructure	1.10

* See the Support Matrix for latest versions supported

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

Managed Node

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

* See the Support Matrix for latest versions supported

Note: You must use 64 bit JRE with 64 bit Operations Agent and 32 bit JRE with 32 bit Operations Agent.

Monitoring Prerequisites

To monitor Hadoop clusters using OMi MP for Hadoop, the following prerequisites must be met:

- The environment must be JMX enabled. You must enable the JMX ports and start the Hadoop services. To enable the JMX ports, you must edit the **hadoop-env.sh** file. This file is available in the Hadoop configuration directory. The following note provides information about the sample configuration of Hadoop environment settings.

Note: Sample configuration of Hadoop environment settings

```
export HADOOP_CONF_DIR=/software/hadoop-1.0.3/conf

export HADOOP_OPTS="-Dcom.sun.management.jmxremote.authenticate=false -
Dcom.sun.management.jmxremote.ssl=false -
Dcom.sun.management.jmxremote.password.file=$HADOOP_CONF_
DIR/jmxremote.password"

#Command specific options appended to HADOOP_OPTS when specified

export HADOOP_NAMENODE_OPTS="-Dcom.sun.management.jmxremote -
Dcom.sun.management.jmxremote.port=8004"

export HADOOP_SECONDARYNAMENODE_OPTS="-Dcom.sun.management.jmxremote -
Dcom.sun.management.jmxremote.port=8005"

export HADOOP_DATANODE_OPTS="-Dcom.sun.management.jmxremote -
Dcom.sun.management.jmxremote.port=8006"

export HADOOP_BALANCER_OPTS="-Dcom.sun.management.jmxremote -
Dcom.sun.management.jmxremote.port=8007"
```

```

export HADOOP_JOBTRACKER_OPTS="-Dcom.sun.management.jmxremote -
Dcom.sun.management.jmxremote.port=8008"

export HADOOP_TASKTRACKER_OPTS="-Dcom.sun.management.jmxremote.port=8009"

# Command specific options appended to HADOOP_OPTS when specified

export HADOOP_NAMENODE_OPTS="-Dhadoop.security.logger=INFO,DRFAS -
Dhdfs.audit.logger=INFO,DRFAAUDIT $HADOOP_NAMENODE_OPTS"

export HADOOP_SECONDARYNAMENODE_OPTS="-Dhadoop.security.logger=INFO,DRFAS-
Dhdfs.audit.logger=INFO,DRFAAUDIT $HADOOP_SECONDARYNAMENODE_OPTS"

HADOOP_DATANODE_OPTS="-Dhadoop.security.logger=ERROR,DRFAS $HADOOP_DATANODE_
OPTS"

HADOOP_JOBTRACKER_OPTS="-Dhadoop.security.logger=INFO,DRFAS -
Dmapred.audit.logger=INFO,MRAUDIT -
Dhadoop.mapreduce.jobsummary.logger=INFO,JSA $HADOOP_JOBTRACKER_OPTS"

HADOOP_TASKTRACKER_OPTS="-Dhadoop.security.logger=ERROR,console -
Dmapred.audit.logger=ERROR,console $HADOOP_TASKTRACKER_OPTS"s

```

- You must have a copy of **Slaves** and `yarn-site.xml` file in the Hadoop conf directory on the managed node on which NameNode is running. This is required for updating the Hadoop topology in RTSM.
- If Hadoop is not available under standard path, for example, `usr/lib/hadoop`, you must set the path to `(hadoop_home)/bin`.

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 9.20 and the BSM 9.23 or higher Service Pack	See the chapter <i>Install BSM 9.20</i> and the chapter <i>Install the latest BSM 9.2x Minor Minor Release and Patch</i> in the

Serial	Task	Reference
		<i>BSM Installation Guide.</i>
3	Install Monitoring Automation version 9.23 or higher	See the chapters <i>Installation Prerequisites</i> and <i>Installing and Configuring Monitoring Automation on BSM servers</i> in the <i>Monitoring Automation for Operations Manager i Installation Guide.</i>
4	Verify the Monitoring Automation installation	See the chapter <i>Verifying the Monitoring Automation Installation</i> and <i>Using Monitoring Automation</i> in the <i>Monitoring Automation for Operations Manager i Installation Guide.</i>
5	Installing Additional Software Update for Monitoring Automation 9.23 Note: If you are installation OMi MP for Microsoft Active Directory on BSM 9.23, you must install additional software update for Monitoring Automation 9.23.	See the section " Installing Additional Software Update for Monitoring Automation 9.23 ".
6	Clean up OMi MP for Infrastructure version 1.00	If OMi MP for Infrastructure version 1.00 is already installed, see <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 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 Hadoop version 1.10 <i>or</i> Upgrade OMi MP for Hadoop version 1.00 to 1.10	See the section " Installing OMi Management Pack for Hadoop version 1.10 on BSM or OMi ". <i>or</i> See the section " Upgrading from OMi MP for Hadoop version 1.00 to 1.10 ".
9	Applying the License	See the section " Applying the License ".

Managed Node

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

Installing Additional Software Update for Monitoring Automation 9.23

Note: You must install additional software update for Monitoring Automation 9.23 only for BSM 9.23.

Before installing OMi MP for Hadoop, you must install an additional software update for Monitoring Automation 9.23. If you are using Monitoring Automation 9.24 or a later version, you do not need to install this additional software update. The additional software update for Monitoring Automation 9.23 (HPOprMA_update.zip) is available in the e-media or MPDVD, under the folder HPOprMA_update.

For more information about installing the update software, see ["Installing Monitoring Automation 9.23 Software Update"](#).

Installing OMi Management Pack for Hadoop version 1.10 on BSM or OMi

You can use the e-media or MPDVD to install the OMi MP for Hadoop on BSM or OMi Server (Linux or Windows). The following section provides information about installing the OMi MP for Hadoop on the BSM 9.2x or OMi 10.x Server. If you are upgrading from OMi MP for Hadoop version 1.00 to 1.10, you can skip the following section.

Note: In a BSM 9.2x or OMi 10.x distributed environment, OMi MP for Hadoop 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 Hadoop 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 Hadoop 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 Hadoop will not be installed.

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

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

To install the OMi MP for Hadoop 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 Hadoop 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 Hadoop is completed.

Upgrading from OMi MP for Hadoop version 1.00 to 1.10

The following section provides detailed information about upgrading from OMi MP for Hadoop version 1.00 to 1.10. If you do not have OMi MP for Hadoop version 1.00, you can skip this section and install OMi MP for Hadoop version 1.10. For more information, see ["Installing OMi Management Pack for Hadoop version 1.10 on BSM or OMi"](#).

Before you upgrade from OMi MP for Hadoop version 1.00 to 1.10, you must ensure that the installation and monitoring prerequisites are met. For more information, see ["Installation Prerequisites"](#).

Upgrade Guidelines

The following list provides guidelines about the upgrade:

- The nodes already managed using OMi MP for Hadoop version 1.00 will function as before after the upgrade.
- The components for OMi MP for Hadoop version 1.00 will continue to be available on the BSM 9.2x or OMi 10.x server.
- You do not have to back up data on the BSM 9.2x or OMi 10.x server but you may need to back up data on the managed node.

- Depending on your requirements, you can upgrade managed node(s) to OMi MP for Hadoop version 1.10.

Prerequisites

Note: The managed node in the following sections refers to the Hadoop managed node that needs to be upgraded.

Before you upgrade to OMi MP for Hadoop version 1.10, you must make sure that the following prerequisites are met:

- BSM 9.2x or OMi 10.x is running successfully on the server
- OMi MP for Hadoop version 1.00 is installed
- OMi MP for Hadoop 1.0 is deployed and CODA is running on the managed nodes.

Upgrading to OMi MP for Hadoop version 1.10

You need to perform the upgrade steps on the BSM 9.2x or OMi 10.x server and the managed nodes.

Task 1: Upgrade from OMi MP for Hadoop version 1.00 to 1.10

You can install OMi MP for Hadoop version 1.10 on the BSM server. For more information, see ["Installing OMi Management Pack for Hadoop version 1.10 on BSM or OMi"](#).

Task 2: Backup CODA database on the managed node

If you want to retain the data in CODA database for future consumption, you can collect the data in CODA database using SHR/OBR Content Pack for Hadoop. You can use SHR/OBR Content Pack for Hadoop is designed to retain the data for longer duration. For more information, see the *SHR/OBR Content Pack for Hadoop* documentation. You can download the *SHR/OBR Content Pack for Hadoop User Guide* from [SHR Hadoop CP](#) or [OBR Hadoop CP](#).

Task 3: Stop monitoring on all the managed nodes

To stop monitoring on the managed node, follow these steps:

1. Open the Event Perspective pane:
On BSM 9.2x, click **Application > Operations Management > Event Perspective**.
On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. In the View Explorer pane, select the **Hadoop Topology** view from the drop down list. The CIs associated with the View appear.
3. Expand the Hadoop cluster CIs and select the managed node CI.
4. Right-click the Hadoop managed node CI and select **Launch Tools**.
5. Select the **Stop Hadoop Monitoring** tool. The Preview Tool Execution window appears.
6. In the **Preview Tool Execution** tab, click **Run Tool**.

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


Task 4: Delete the CODA data source created by OMi MP for Hadoop version 1.00

To delete the CODA data source created by OMi MP for Hadoop version 1.00, follow these steps:

1. Open the Event Perspective pane:
On BSM 9.2x, click **Application > Operations Management > Event Perspective**.
On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. In the View Explorer pane, select the Hadoop Topology view from the drop down list. The CIs associated with the View appear.
3. Expand the Hadoop cluster CIs and select the managed node CI.
4. Right-click the Hadoop managed node CI and select **Launch Tools**.
5. Select the **Delete DataSource for Hadoop Monitoring** tool. The Preview Tool Execution window appears.
6. In the **Preview Tool Execution** tab, click **Run Tool**.

Note: You must run the Delete DataSource for Hadoop Monitoring on each node CI.

Task 5: Undeploy Hadoop Management Template or Hadoop Aspects

1. Open the Assignments & Tuning pane:
 - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.
 - On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
2. Select the Hadoop Management Template or Hadoop Aspect and click .

Task 6: Re-deploy Hadoop Discovery Aspect from OMi MP for Hadoop version 1.10 to all Nodes

For information about deploying the Hadoop Discovery Aspect, see "[Task 5: Deploying Management Template or Aspects](#)".

Task 7: Re-deploy selected assignments using Assignments & Tuning

1. Open the Assignments & Tuning pane:
 - On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.
 - On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
2. In the **Browse Views** tab, select the Hadoop Topology View from the drop down list.
3. Expand the Hadoop cluster CIs and select the managed node CI. The list of assigned items appears in the Assignment pane.


4. In the Assignments pane, select the **Hadoop Discovery** and click  Re-deploy Selected Assignments.

Task 8: Deploy the Hadoop Management Templates or Hadoop Aspects

To deploy the Management Templates, see "[Task 5a: Deploying Essential Hadoop Management Template](#)"

To deploy the Hadoop Aspects, see "[Task 5b: Deploying Hadoop Aspects](#)".

Task 9: Re-deploy selected assignments

1. Open the Assignments & Tuning pane:
On BSM 9.2x, click **Admin > Operations Management > Monitoring > Assignments & Tuning**.
On OMi 10.x, click **Administration > Monitoring > Assignments & Tuning**.
2. In the **Browse Views** tab, select the Hadoop Topology View from the drop down list.
3. Expand the Hadoop cluster CIs and select the managed node CI. The list of assigned items appears in the assignment pane.
4. In the Assignments pane, select the Hadoop Management Templates or Hadoop Aspects and click  **Re-deploy Selected Assignments**.

Note: The Hadoop configuration folder does not get created under BigData Management configuration folder as expected after upgrade to Hadoop MP 1.1. The Hadoop configuration folder can be dragged and dropped under the BigData Management configuration folder if required. The location of the configuration folder does not impact the run time functionality of OMi MP for Hadoop.

Applying the License

This section provides information about updating and activating the license.

Note: For more information about procuring the license, see the "Licensing" section.

To update your deployment with a new license and to activate the license, follow these steps:

1. Navigate to the License Management pane:

On BSM 9.2x, click **Admin > Platform > Setup and Maintenance > License Management**.

On OMi 10.x, click **Administration > Setup and Maintenance > License Management**.

The License Management provides details about the name, license type, days left to expiry of license, expiration date, capacity, and capacity details.

2. Click  to open the Add License dialog box where you can search for the relevant .dat file.

Note: You can download .dat file from <http://enterpriselicense.hpe.com>.

Verifying the OMi MP for Hadoop Installation or Upgrade

This section provides information about verifying the installation of OMi MP for Hadoop 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 Hadoop 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 Hadoop** must appear in the Content Pack Definitions pane.
 - On OMi 10.x, click **Administration > Setup and Maintenance > Content Packs**.
The **OMi Management Pack for Hadoop** must appear in the Content Pack Definitions pane.
- To list the OMi MPs installed on the BSM 9.2x or OMi 10.x server, run the following command on BSM 9.2x or OMi 10.x GWS:

For Linux:

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

For Windows:

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


Note: The ContentManager.bat or ContentManager.sh command lists the Content Pack name and version.

Chapter 3: Getting Started

The following section provides step-by-step instructions for monitoring Hadoop environments using OMi MP for Hadoop.

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

Before you begin monitoring, you need to add the CI to the OMi console.

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 Filters > Monitored Nodes** and then click  and then click **Computer > <select the required OS type>**. The Create New Monitored Node dialog box appears.
3. Specify the Primary DNS Name, IP address, Operating System, and Processor Architecture of the node and click **OK**.

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

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

Task 2: Enabling the Enrichment Rules

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


- SoftwareElementDisplayLabelForNewHost
- SoftwareElementDisplayLabelForExistingHost

- SoftwareElementDisplayLabelPopulator

To enable the Enrichment rules, follow these steps:

1. Open the Enrichment manager pane:

On BSM 9.2x, click **Admin > RTSM Administration > Modeling > Enrichment manager**.

On OMi 10.x, click **Administration > RTSM Administration > Modeling > Enrichment manager**.
2. In the Enrichment Rules pane, select **SoftwareElementDisplayLabelForNewHost** from the list.
3. Right-click and select **Properties**. The Enrichment Rule Properties window appears.
4. Click **Next**.
5. Select **Rule is Active**.
6. Click **Finish**.
7. In the Enrichment Rules pane, click  to save the changes.
8. Select **SoftwareElementDisplayLabelForExistingHost** and repeat steps 3 to 7.
9. Select **SoftwareElementDisplayLabelPopulator** and repeat steps 3 to 7.


Task 3: Deploying the Hadoop Discovery Aspect

To discover the Hadoop CIs in the environment, you must deploy the Hadoop Discovery Aspect on the Name Node CIs on which NameNode service is running by following 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 > BigData Management > Hadoop > Aspects
3. In the Aspects folder, click the **Hadoop Discovery Aspect** that you want to deploy, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, click the **CI** and then click **Next** to go to **Required Parameters**.
5. *(Optional)*. 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, click **Next**.
7. *(Optional)*. In the **Configure Options** tab, if you do not want to enable the assignment immediately, perform the following:
 - 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 by using the Assignments & Tuning pane.
8. Click **Finish**.

Note: After the Hadoop Service Discovery Aspect is deployed, a message stating the Assignment and deployment jobs created appears. To check the status of the deployment jobs, go to the following location:

On BSM 9.2x, click **Admin > Operations Management > Monitoring > Deployment Jobs**.

On OMi 10.x, click **Administration > Monitoring > Deployment Jobs**.

Task 4: Verifying Discovery

After you deploy the Hadoop Service Discovery Aspect, you must verify if the CIs are populated in the Top view.

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

1. Open the Event Perspective pane:
 - On BSM 9.2x, click **Applications > Operations Management > Event Perspective**.
 - On OMi 10.x, click **Workspaces > Operations Console > Event Perspective**.
2. In the **View Explorer**, select the **Hadoop_Topology** view.

Task 5: Deploying Management Template or Aspects

This section provides information about data collection, deployment of management template and aspects. For more information, go to ["Task 5a: Deploying Essential Hadoop Management Template"](#)

Management Pack Data Collection Process

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

Following are the four predefined frequency parameters:

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

After Management Templates and Aspects are deployed, collector is triggered based on the parameter value in a specific policy. You can modify the default value of the parameter at following two levels:

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






For more information about how to modify the parameter values, see the section *Editing Parameters* in the *OMi Management Pack for Hadoop 1.10 User Guide*.

Note: Before deploying the Essential Hadoop Management Template or Hadoop Aspects, you must discover the Hadoop CIs on all the managed nodes using the Hadoop Discovery Aspect.

Task 5a: Deploying Essential Hadoop Management Template

You **must** deploy the Hadoop Service Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM and so on. For more information, see "[Task 3: Deploying the Hadoop Discovery Aspect](#)".

You can deploy the Essential Hadoop Management Template by following 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 > BigData Management > Hadoop > Management Templates**.
3. In the **Management Templates** folder, click the Essential Hadoop Management Template that you want to deploy, and then click . The Assign and Deploy wizard opens.
4. In the **Configuration Item** tab, click the CI to which you want to assign the Management Template, and then click **Next**.
5. In the **Required Parameters** tab, click **Next**.
6. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, select the Application Instance (NameNode | Resource Manager | JobTracker| Secondary NameNode) parameter and click . The Edit Instance Parameter: Application Instance dialog box opens. To modify the dependent parameters for Hadoop Master, follow these steps:
 - a. Select the dependent parameter and click . For example, you can select the parameter **Severity of Hadoop_MasterService_Availability**.
 - b. Click **Value** and specify the value and then click **OK**.
 - c. Click **OK**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, select the Application Instance (DataNode | NodeManager | TaskTracker) parameter and click . The Edit Instance Parameter: Application Instance dialog box opens. To modify the dependent parameters for Hadoop Slave, follow these steps:
 - a. Select the dependent parameter and click . For example, you can select the parameter **Severity of Hadoop_SlaveService_Availability**.
 - b. Click **Value** and specify the value and then click **OK**.
 - c. Click **OK**.
8. Click **Next** to go to **Configure Options** tab.
9. *Optional.* In the **Configure Options** tab, if you do not want to enable the assignment immediately, perform the following:
 - 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 Hadoop Aspects

You **must** deploy the Hadoop Service Discovery Aspect even if the CIs are already populated by any other source such as SiteScope, DDM and so on. For more information, see [Task 3: Deploying the Hadoop Discovery Aspect](#).

You can deploy the Hadoop Aspects by following 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 > BigData Management > Hadoop > Aspects.

3. In the **Aspects** folder, click the 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 Aspect, and then click **Next**.
5. In the **Required Parameters** tab, click **Next**.
6. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, select the Application Instance (NameNode | Resource Manager | JobTracker| Secondary NameNode) parameter and click . The Edit Instance Parameter: Application Instance dialog box opens. To modify the dependent parameters for Hadoop Master, follow these steps:
 - a. Select the dependent parameter and click . For example, you can select the parameter **Severity of Hadoop_MasterService_Availability**.
 - b. Click **Value** and specify the value and then click **OK**.
 - c. Click **OK**.
7. In the **All Parameters** tab on BSM 9.2x or **Parameter Summary** tab on OMi 10.x, select the Application Instance (DataNode | NodeManager | TaskTracker) parameter and click . The Edit

Instance Parameter: Application Instance dialog box opens. To modify the dependent parameters for Hadoop Slave, follow these steps:

- a. Select the dependent parameter and click . For example, you can select the parameter **Severity of Hadoop_SlaveService_Availability**.
 - b. Click **Value** and specify the value and then click **OK**.
 - c. Click **OK**.
8. Click **Next** to go to **Configure Options** tab.
 9. *Optional.* In the **Configure Options** tab, if you do not want to enable the assignment immediately, perform the following:
 - 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**.

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 `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 `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
```

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 Hadoop 1.10)

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!