

HP Network Node Manager iSPI for IP Multicast

Software Version: 10.10
for the Linux® operating system

Installation Guide

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Chapter 1: Introduction

The HP Network Node Manager i Software Smart Plug-in for IP Multicast (NNMi iSPI for IP Multicast) extends the capability of NNMi to monitor and manage the network. The NNM iSPI for IP Multicast presents additional views to indicate the status of the discovered multicast enabled devices. You can monitor the overall health of the Multicast network using the NNM iSPI for IP Multicast.

The IP Multicast Online Help provides you the comprehensive information about the IP Multicast Inventory, IP Multicast forms, Incidents, and map views.

The NNM iSPI for IP Multicast, in conjunction with NNMi, performs the following tasks:

- Discovering the Multicast-enabled nodes.
- Displaying the Multicast nodes and PIM interfaces in the IP Multicast views.
- Monitoring the status of every discovered component of the Multicast network.
- Monitoring the flows against their baseline snapshots.
- Displaying the list of receivers of a particular flow on a router.
- Troubleshooting the network by using the IP multicast map views such as Forwarding Tree, Reverse Path, Neighbor View, and Snapshots.
- Monitoring the multicast enabled devices from the Global Network Manager's inventory.
- Monitoring the network by using the topology map views.
- Troubleshooting the network by viewing the IP Multicast reports period.

After you install (and configure) the NNM iSPI for IP Multicast on the NNMi management server, you can monitor and troubleshoot the problems in your environment with the additional views provided by the NNM iSPI for IP Multicast.

IP Multicast Workspace

The NNM iSPI for IP Multicast uses the NNMi console to introduce the IP Multicast-related views to monitor your network. The IP Multicast views provide the list of the discovered multicast objects. You can monitor the health of the multicast objects by using the IP Multicast workspace.

The NNM iSPI for IP Multicast monitors the health of multicast enabled nodes, PIM interfaces, PIM neighbors, and Multicast Flows (S, G). The views extend the capabilities to NNMi to perform fault monitoring and management of multicast network.

You can use the NNMi user-level access for the IP Multicast workspace. The NNM iSPI for IP Multicast uses the operator and administrator level security access for various tasks. With the operator-level privileges, you can perform the fault management tasks by monitoring the status and incidents of all

the Multicast objects. With the administrator-level privileges, you can complete all the configuration tasks from the IP Multicast Configuration workspace.

As an administrator of the NNM iSPI for IP Multicast, you can control the access to multicast inventory, forwarding trees, reverse paths, neighbor views, and incidents. This feature helps to maintain privacy and security of each organization. The operators should not interact with devices that belong to other organizations. For example, the operators must see the details of only those multicast nodes to which they have access in the inventory.

Chapter 2: Before you Begin

Before you start installing the NNM iSPI for IP Multicast, you must plan the installation based on your deployment requirements. You must identify the ideal deployment scenario among the supported configuration. Make sure that all the prerequisites are met before you begin the installation process.

Before you begin, make sure that NNMi is installed in the environment and is running. You must install the product on the NNMi management server. In addition, you can install the NNM iSPI for IP Multicast in High-Availability (HA) cluster environments and application failover environments that are supported by NNMi. For more information, see *HP Network Node Manager iSPI for IP Multicast Deployment Reference 10.10*.

Before you begin the NNM iSPI for IP Multicast installation, follow these steps:

1. Install NNMi. Make sure that NNMi is running.
2. Install the available NNMi patches.
3. Start the NNM iSPI for IP Multicast installation process.

Preinstallation Tasks

Before you start installing the NNM iSPI for IP Multicast, complete the following tasks:

Create a New User with the Web Service Client Role

Create a user from the NNMi console with the Web Service Client role. This user will be used during the installation of the NNM iSPI for IP Multicast. Do not use the NNMi system account while installing the NNM iSPI for IP Multicast.

For more information about creating users, see *Configure NNMi User Accounts topic of the Network Node Manager i Software Online Help (for Administrators)*.

Only for Oracle. Note down the database details

This task is not applicable to you if you choose to use the embedded database.

You can choose an external Oracle database instead of the embedded database to store the NNMi data. The external Oracle database can reside either on the NNMi management station, or on a remote server. You must note down the following details of the NNMi database:

- **Type:** Oracle database.
- **Port:** The port used by the Oracle database.

- **Hostname:** The fully-qualified domain name of the Oracle server.
- **Oracle Database Name:** Name of the Oracle database instance.
- **Username:** The Oracle user name created to access NNMi data.
- **Password:** Password for the Oracle user name. Create the Oracle password to be used during the installation of NNM iSPI for IP Multicast.

For more information, see *Database Installation* topic in the *NNMi 10.10 Interactive Installation Guide*.

Only for Oracle. Create a New Oracle Instance

Skip this task if you choose to use the embedded database. You must create a new Oracle instance before installing the NNM iSPI for IP Multicast. While installing and configuring the NNM iSPI for IP Multicast, do not use the same Oracle instance that was configured with NNMi.

Preparing for Installation

Before installing the NNM iSPI for IP Multicast, make sure that your NNMi management server meets all the hardware and software requirements.

For complete information about the hardware and software requirements and dependencies, see the *HP Network Node Manager i Ultimate Support Matrix* and *HP Network Node Manager i Ultimate Release Notes* documents

The following table lists the preinstallation checklist for hardware and software requirements:

Requirement	Reference Document	Complete(Yes/No)
Disk space	HP Network Node Manager i Ultimate Support Matrix	Yes
Operating system	HP Network Node Manager i Ultimate Support Matrix	Yes
Database	HP Network Node Manager i Ultimate Support Matrix	Yes

Chapter 3: Installing the NNM iSPI for IP Multicast

You can install the NNM iSPI for IP Multicast by using the installation wizard. The wizard guides you through the installation process.

Installing on a Management Server

To install the NNM iSPI for IP Multicast, follow these steps:

1. Log on to the management server with `Administrator root` privileges.
2. Insert the NNM iSPI for IP Multicast installation media into the CD-ROM drive. The CD-ROM must start automatically. If the installation does not start, double-click the `setup.exe` `setup.bin` file . The installation wizard opens.
3. Select the language and click **OK**. By default, English is selected. The installer configures your system for the installation and initializes the installation process.
4. In the **Introduction (Install)** screen, check the NNM iSPI for IP Multicast information, and then click **Next**.
5. On the **License Agreement** page, check the NNM iSPI for IP Multicast license terms. If you agree with the terms of the license agreement, click **I accept...**, and then click **Next**.
6. On the **Select the Installation Type** screen, select one of the following options:
 - If you want to use the embedded database, select **Typical**.
 - If you want to use an Oracle database that runs on the standard port (1521), select **Typical**
 - If you want to use an Oracle database that runs on a non-standard port (other than 1521), select **Custom**.
7. **If you select Typical:**

Note: Select **Custom** only if you want to use the Oracle database that uses a non-standard port. If you select **Custom**, go to ["If you select Custom:" on the next page](#).

- a. After selecting **Typical**, click **Next**. The Server Configuration screen appears.
- b. In the Choose the Database Type section, select one of the following options:
 - HP Software Embedded Database
 - Oracle

Note: If you are using the Oracle Real Application Cluster (RAC) solution, during an application failover there is a short time window of data loss that might occur after the failover occurs. The amount of data loss increases with the size of the managed network and the rate of traps and incidents being evaluated. To configure RAC, work with your Oracle database administrator to install an Oracle database according to the instructions provided by Oracle.

Note: Make sure to select the same database type (embedded or Oracle) that you have selected while installing NNMi.

- c. Go to **Click Next. In the Choose Database Initialization Preferences page, choose any one of the following options:** below if you selected the Oracle option.
If you selected HP Software Embedded Database, go to **Click Next. The Install Checks screen appears. The wizard checks for the available disk space. " on the next page.**

- d. Click **Next**. In the Choose Database Initialization Preferences page, choose any one of the following options:

Note: Select the same database type (Primary Server or Secondary Server) as NNMi.

- o **Primary Server Installation** - Select this option for installing the NNM iSPI for IP Multicast on the primary server.
 - o **Secondary Server Installation** - Select this option for installing the NNM iSPI for IP Multicast in an Application Failover or High Availability (HA) environment.
- e. Click **Next**. In the **Enter your database server information** page, specify the following information that you have used while creating a new Oracle instance for the NNM iSPI for IP Multicast:

- o **Host** - The fully-qualified domain name of the Oracle server. Type the server name.

Note: If you are using Oracle RAC, type the physical hostname of one of the Oracle servers.

- o **Instance** - Type the name of the Oracle database instance.

Note: If you are using Oracle RAC, type the logical instance name.

- f. Click **Next**. Type the following information that you have used while creating a new Oracle instance for the NNM iSPI for IP Multicast:

- o **Username** - Type the Oracle username created to access IP Multicast data.
- o **Password** - Type the password for the mentioned user.

8. **If you select Custom:**

Note: If you selected Typical, go to **Click Next. The Install Checks screen appears. The wizard checks for the available disk space. " on the next page.**

- a. After selecting **Custom**, click **Next**. The Feature Selection screen appears.
 - b. Click **Next**. The Server Configuration screen appears.
 - c. In the Choose the Database Type section, select Oracle, and then click **Next**. The Choose Database Initialization Preferences screen appears.
 - d. Select Primary Server Installation if you want to install the NNM iSPI for IP Multicast on the primary server. Select Secondary Server Installation if you want to install the NNM iSPI for IP Multicast in an Application Failover or High Availability (HA) environment. After making the selection, click **Next**. The Enter Your Database Server Information screen appears.
 - e. Type the hostname and port of the Oracle system and the database instance name, and then click **Next**. The Enter the database user account information screen appears.
 - f. Type the user name and password of the Oracle database instance.
9. Click **Next**. The Install Checks screen appears. The wizard checks for the available disk space.
 10. Click **Next**. The **Pre-Install Summary** screen appears.
 11. Review the options, and then click **Install**. The installation process begins.
 12. Specify the following details in the **Multicast iSPI Configuration** dialog box:

Note: The NNMi configuration parameters should be same as you have entered while installing NNMi. Type the same configuration details while installing iSPI.

- **NNMi Server: Information required by Multicast iSPI** (Information required by the NNM iSPI for IP Multicast to communicate with NNMi)

Note: The configured NNMi values appear in the dialog box.

- **NNMi FQDN:** The fully-qualified domain name (FQDN) or the hostname of the NNMi management server. Check the NNMi name from **Help->System Information-> Server**.
- **NNMi HTTP Port:** The NNMi HTTP port number appears. The default value is 80. To verify or modify the port number after installing the NNM iSPI for IP Multicast, open the **nms-local.properties** file and check the *nmsas.server.port.web.http* value from the *NnmDataDir\conf\nnm\props* directory *NnmDataDir\conf\nnm\props* directory. To update the NNMi port number, see "[Updating the NNMi Port Number](#)" on page 21.
- **NNMi HTTPS Port:** The NNMi HTTPS port number appears. The default value is 443. To verify or modify the port number after installing the NNM iSPI for IP Multicast, open the **nms-local.properties** file and check the *nmsas.server.port.web.https* value from the *NnmDataDir\conf\nnm\props* directory *NnmDataDir\conf\nnm\props* directory platforms. To update the NNMi port number, see "[Updating the NNMi Port Number](#)" on page 21.
- **NNMi JNDI Port:** Port number used by the jboss application server for internal communication. The JNDI port number appears. The default value is 1099. To verify or modify the port number after installing the NNM iSPI for IP Multicast, open the **nms-local.properties** file and check the *nmsas.server.port.naming.port* value from the

NnmDataDir\conf\nnm\props directory *NnmDataDir/conf/nnm/props* directory. To update the NNMi port number, see ["Updating the NNMi Port Number" on page 21](#).

- **Web Service Client User Name:** Type the Web Service Client user name.
 - **Web Service Client Password:** Type the Web Service Client password.
 - **Retype Password:** Retype the password to confirm the password.
 - **isSecure:** Select the option to enable HTTPS. By default, NNMi uses HTTP. This option specifies the mode of transmission such as secure or non-secure.
- **Multicast iSPI Server: Information Required by NNMi** (Information required by the NNMi to communicate with iSPI for IP Multicast)

Note: The various cases for the (Fully Qualified Domain Name (FQDN) configuration parameters are listed below:

- The NNMi and the NNM iSPI for IP Multicast must use the same FQDN. If the NNMi server uses more than one domain name, installation process chooses one and the NNM iSPI for IP Multicast installation must also select the same domain name. To find the official FQDN of the NNMi server, use any one of following:
 - Run the `nmofficialfqdn.ovpl` command.
 - From the NNMi console, click **Help->System Information-> Server**.
- At the time of NNMi installation, if you are using the partial domain name as <people> or the IP Address as <xx.xx.xx.xx> and not the fully qualified domain name, the NNM iSPI for IP Multicast also contains the same partial domain name or the IP Address. In this case, the Single Sign-on is disabled.

- **Multicast FQDN:** - The FQDN of the NNMi management server.
- **Multicast HTTP Port:** - The non-secure port number. The default value is 8084. Type the port number if you are not using the default value.
- **Multicast HTTPS Port:** - The secure port number. The default value is 14443. Type the port number if you are not using the default value.
- **Multicast JNDI Port:** - The default port number is 14099. This port number is used by the jboss application server for internal communication.
- **isSecure** - Select the option to enable HTTPS. By default, the NNM iSPI for IP Multicast uses HTTP. This option specifies the mode of transmission such as secure or non-secure.

Note: Always select the same mode of transmission for NNMi and the NNM iSPI for IP Multicast.

13. Click **Submit** to proceed with the installation process. If the INFORM dialog boxes open, click and review each warning, and take appropriate actions.
14. When the installation process is complete, click **Done**.
15. If you are using non-default ports, run the following commands before you start multicast jboss:

- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke
com.hp.ov.nms.topo:service=NetworkApplicationsetApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke
com.hp.ov.nms.topo:service=NetworkApplicationsetApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke
com.hp.ov.nms.topo:service=NetworkApplicationsetApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke
com.hp.ov.nms.topo:service=NetworkApplicationsetApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`

Note: In these commands:

`<username>` is the system user for NNMi (the user account created during the NNMi installation).

`<password>` is the password for the above user.

`<nnmi_host_fqdn>` is the fully qualified domain name of the NNMi management server specified during the NNMi installation.

`<nnmi_http_port>` is the HTTP port used by NNMi.

`<iSPI_http_port>` is the HTTP port used by the NNM iSPI for IP Multicast.

`<iSPI_https_port>` is the HTTPS port used by the NNM iSPI for IP Multicast.

16. Restart the NNMi jboss processes by running the following commands:

```
ovstop -c ovjboss
```

```
ovstart -c ovjboss
```

17. You can start the IP Multicast processes. For more information about processes, see ["Starting and Stopping the NNMi and the NNM iSPI for IP Multicast Processes" on the next page](#).

You can check the necessary information about the installation from Summary and Details tab. If the installation process fails to complete, you can Rollback the Installation process and start again.

If you are using the Oracle RAC option, you must perform the following before starting the `mcastjboss` process:

- Modify the `$NNMDataDir/nmsas/mcast/server.properties` `%NnmDataDir%\nmsas\mcast\server.properties`

file by adding the following:

- `com.hp.ov.nms.oracle.otherHost=<Hostname/IP Address of the secondary Oracle RAC server>`
- `com.hp.ov.nms.oracle.serviceName=${com.hp.ov.nms.oracle.sid}`
- `com.hp.ov.nms.oracle.connection.url=${com.hp.ov.nms.oracle.connection.cluster.url}`

After you modify the file, run the following commands:

```
ovstop -c mcastjboss
```

```
ovstart -c mcastjboss
```

Starting and Stopping the NNMi and the NNM iSPI for IP Multicast Processes

After the installation process is complete, check that NNMi is running, and then start and stop the Multicast processes manually by the following set of commands:

- Check the status of the NNMi process using the following command:

```
ovstatus -c
```

If the NNMi process is not running, start the NNMi process using the following command:

```
ovstart -c ovjboss
```

- Start the Multicast process using the following command:

```
ovstart -c mcastjboss
```

- Stop the Multicast process using the following command:

```
ovstop -c mcastjboss
```

Verifying the NNMi and the NNM iSPI for IP Multicast Processes

Check if the NNMi and IP Multicast processes are running by using the following command: `ovstatus -c`.

Removing the NNM iSPI for IP Multicast

Before you start the removal process, make sure that the Multicast process is stopped but the NNMi process (ovjboss) is running.

Note: Uninstall the NNM iSPI for IP Multicast first and then the NNMi.

To uninstall the NNM iSPI for IP Multicast from a management station, follow these steps:

1. Log on to the management station with the administrative root privileges.

2. Run the following command:

```
%NnmInstallDir%\Uninstall\HPOvMCastiSPI\setup.exe
```

```
$NnmInstallDir/Uninstall/HPOvMCastiSPI/setup.bin
```

The uninstallation wizard opens.

3. Follow the instructions on the wizard and complete the procedure to remove the product.

4. When the process is complete, click **Done**.

Note: When you uninstall the NNM iSPI for IP Multicast, the multicast capabilities set on the NNMi nodes and the multicast-specific custom correlation rules are not removed from the NNMi Custom Correlation Configuration page.

Modifying NNM iSPI for IP Multicast Ports

The NNM iSPI for IP Multicast uses a set of ports for its operation. These ports are configured at the time of installation by the installer and the installer offers you the option to choose non-default values for the HTTP and HTTPS ports. The `server.properties` file (available under the `%NnmDataDir%\nmsas\multicast` directory) provides a list of those ports.

After installation, you can configure the NNM iSPI for IP Multicast to use different HTTP and HTTPS ports (different from what was configured at the time of installation).

To modify the HTTP and HTTPS port of the NNM iSPI for IP Multicast, follow these steps:

1. Log on to the NNMi management server as administrator.

2. Run the following commands on the management server:

- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`

In this instance, `<iSPI_http_port>` is the old http port number used by the NNM iSPI for IP Multicast.

- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the old https port number used by the NNM iSPI for IP Multicast.
- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the new http port number to be used by the NNM iSPI for IP Multicast.
- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the new https port number to be used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the old http port number used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the old https port number used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the new http port number to be used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the new https port number to be used by the NNM iSPI for IP Multicast.

Note: In all these commands:

`<username>` is the system user for NNMi (the user account created during the NNMi installation).

`<password>` is the password for the above user.

`<nnmi_host_fqdn>` is the fully qualified domain name of the NNMi management server specified during the NNMi installation.

`<nnmi_http_port>` is the HTTP port used by NNMi.

3. Open the `server.properties` file with a text editor from the `%NnmDataDir%\nmsas\multicast` directory.
4. Replace the value of the `nmsas.server.port.web.https` property with the new HTTPS port.
5. Replace the value of the `nmsas.server.port.web.http` property with the new HTTP port.
6. Save the file.
7. Restart the `ovjboss` and `mcastjboss` processes with the following commands:

```
ovstop -c ovjboss
```

```
ovstart -c mcastjboss
```

Reinstall the NNM iSPI for IP Multicast with Different Ports

To reinstall the NNM iSPI for IP Multicast with different ports, follow these steps:

1. Install the NNM iSPI for IP Multicast with different ports.
2. Before you start the multicast jboss, run the following commands:
 - `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username>-p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
 In this instance, `<iSPI_http_port>` is the old http port number used by the earlier installation of the NNM iSPI for IP Multicast.
 - `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
 In this instance, `<iSPI_https_port>` is the old https port number used by the NNM iSPI for IP Multicast.

- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the new http port number to be used by the NNM iSPI for IP Multicast.
- `%NnmInstallDir%\support\nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the new https port number to be used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the old http port number used by the earlier installation of the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication removeApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the old https port number used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> http <iSPI_http_port>`
In this instance, `<iSPI_http_port>` is the new http port number to be used by the NNM iSPI for IP Multicast.
- `$NnmInstallDir/support/nnmtwiddle.ovpl -u <username> -p <password> -host <nnmi_host_fqdn> -port <nnmi_http_port> invoke com.hp.ov.nms.topo:service=NetworkApplication setApplicationService multicast <nnmi_host_fqdn> https <iSPI_https_port>`
In this instance, `<iSPI_https_port>` is the new https port number to be used by the NNM iSPI for IP Multicast.

Note: In all these commands:

<username> is the system user for NNMi (the user account created during the NNMi installation).

<password> is the password for the above user.

<nnmi_host_fqdn> is the fully qualified domain name of the NNMi management server specified during the NNMi installation.

<nnmi_http_port> is the HTTP port used by NNMi.

3. Restart the ovjboss by running the following commands:

- `ovstop -c ovjboss`
- `ovstart -c ovjboss`

4. Start the IP Multicast processes.

Installing in a High-Availability or Application Failover Environment

You can install the NNM iSPI for IP Multicast in a high-availability (HA) environment or application failover environment to achieve redundancy in your monitoring setup. For more information, see the *HP NNM iSPI for IP Multicast 10.10 Deployment Reference guide*.

Accessing the Log Files

The NNM iSPI for IP Multicast stores all the installation-related information into the following directory:

`%temp%`

`/tmp/`

List of IP Multicast log files

The log files are as follows:

- `HPOvMCastiSPI_10.10.000_HPOvInstaller.txt`
- `preInstall_mcast.log`
- `preRemove_mcast.log`

- `postInstall_mcast.log`
- `postRemove_mcast.log`

Updating the NNMi Port Number

During the NNM iSPI for IP Multicast installation, type the same NNMi port numbers that you have specified while installing NNMi. If you want to update the NNMi port number after the NNM iSPI for IP Multicast installation, update the `com.hp.ov.nms.spi.multicast.Nnm.port` field in `nnm.extended.properties` file. The `nnm.extended.properties` file is available in the following directory:

```
%NnmDataDir%\shared\multicast\conf\
```

```
$NnmDataDir/shared/multicast/conf/
```

Restart the NNM iSPI for IP Multicast with the following commands:

- `ovstop -c mcastjboss`
- `ovstart -c mcastjboss`

Updating the Security Mode (HTTP to HTTPS)

After installing NNMi and the NNM iSPI for IP Multicast, you can modify the security mode from HTTPS to HTTP or vice versa without installing NNMi and the NNM iSPI for IP Multicast again. To update the mode, follow these steps:

1. On the management server, open the `nnm.extended.properties` file from the `%NnmDataDir%\shared\multicast\conf $NnmDataDir/ shared/multicast/conf` directory with a text editor.
2. Update the values to true or false from the following:
 - `com.hp.ov.nms.spi.multicast.spi.isSecure=false`
 - `com.hp.ov.nms.spi.multicast.Nnm.isSecure=false`

If the value is false, the mode of transmission is HTTP.

If the value is true, the mode of transmission is HTTPS.

Note: Always select the same mode of transmission for NNMi and the NNM iSPI for IP Multicast.

Updating the NNMi System Password

If you modify the NNMi system account credentials after installing the NNM iSPI for IP Multicast, follow these steps to synchronize the change with the NNM iSPI for IP Multicast setup.

1. Log on to the NNMi management server.
2. Run the following command to copy the NNMi password:

```
encryptmulticastpasswd.ovpl -c multicast
```

where:

c - NNMi jboss to iSPI for IP Multicast jboss communication multicast (case insensitive)

Note: Only users with root permission can run this script.

3. Restart the NNM iSPI for IP Multicast with the following commands:

- `ovstop -c mcastjboss`
- `ovstart -c mcastjboss`

Updating the NNM iSPI for IP Multicast (Web Service Client Password)

The NNM iSPI for IP Multicast is configured with Web Service Client Username and Password to communicate with NNMi in the installation process. The user must be added in NNMi with the role of Web Service Client user to use the script to update the password.

Note: Avoid System role for NNMi - iSPI for IP Multicast communication.

Only users with root permission can run this command.

If you want to update the NNM iSPI for IP Multicast password, follow these steps:

1. Log on to the NNMi management server.
2. Run the following command:

```
encryptmulticastpasswd.ovpl -e multicast <password>
```

The `encryptmulticastpasswd.ovpl` command helps you update the NNM iSPI for IP Multicast password.

3. Restart the NNM iSPI for IP Multicast with the following commands:

- `ovstop -c mcastjboss`
- `ovstart -c mcastjboss`

Chapter 4: Getting Started with the NNM iSPI for IP Multicast

After you complete the installation of the NNM iSPI for IP Multicast in your NNMi environment, you can start monitoring your network with the NNMi and NNM iSPI for IP Multicast. After installing the NNM iSPI for IP Multicast, you can start the discovery process to view the IP Multicast-enabled nodes and Multicast objects from the IP Multicast workspace.

Accessing the NNM iSPI for IP Multicast

You can monitor the network by using the NNMi and the NNM iSPI for IP Multicast. To start the NNM iSPI for IP Multicast after the initiation of the first discovery polling cycle, follow these steps:

1. Launch the NNMi console.
2. Log on to the NNMi console with any one of the following user roles:
 - Administrator
 - Operator level 1
 - Operator level 2
 - Guest
3. In the Workspace pane, click **IP Multicast**. The IP Multicast workspace shows the IP Multicast Inventory. You can access the Multicast forms and map views from the IP Multicast workspace.

Accessing the Online Help

The NNM iSPI for IP Multicast Help provides information related to using the NNM iSPI for IP Multicast console. The detailed information in the NNM iSPI for IP Multicast help is organized into the following sections:

- Help for Operators
- Help for Administrators

To access the NNM iSPI for IP Multicast help, click **Help** -> **Help for NNM iSPIs** -> **Help for iSPI for IP Multicast**. The NNM iSPI for IP Multicast help appears in the NNMi console only if the NNM iSPI for IP Multicast installation is successful.

Accessing the IP Multicast Configuration Workspace

You can perform the following configuration tasks after installing the NNM iSPI for IP Multicast:

- Configure the Polling Frequencies
- Configure the Group Discovery
- Configure the Regional Manager
- Configure the Flow Monitor Settings

Accessing the IP Multicast Reports

The NNM iSPI for IP Multicast uses the basic capabilities of the NNM iSPI Performance for Metrics and Network Performance Server (NPS) to present the IP Multicast reports. Install the NNM iSPI Performance for Metrics and Network Performance Server (NPS) from the media, and then install the NNM iSPI for IP Multicast to view the IP Multicast reports.

The NNM iSPI for IP Multicast introduces the following extension packs:

- IP_Multicast_Interface
- IP_Multicast_Flow

The extension packs use data collected by the NNM iSPI for IP Multicast. Make sure that NPS and NNM iSPI Performance for Metrics are up and running.

To view the IP Multicast reports, from the NNMi console, click **Actions -> HP NNM iSPI Performance -> Reporting - Report Menu**. The NNM iSPI Performance for Metrics console appears with the reports.

Appendix A: Troubleshooting the NNM iSPI for IP Multicast

This chapter lists the trouble scenarios that you may encounter while installing the NNM iSPI for IP Multicast and tips to resolve these issues.

Installing the NNM iSPI for IP Multicast

- *Problem:* The NNM iSPI for IP Multicast installation process stops abruptly.
Solution: The installation process is not able to create and copy the folders. Check the error messages and the available disk space. In addition, check if you have necessary permissions on the management server.
- *Problem:* The NNM iSPI for IP Multicast process appears in the FAILED state and you are the process cannot be restarted.
Solution: Stop and start ovspmd (all the processes) again. Check `ovstatus -c` to verify if the state of the process is changed from FAILED state to RUNNING state.
This is a time consuming process but this is the only workaround available to start the processes.
- *Problem:* The extension packs introduced by the NNM iSPI for IP Multicast fail to start if you install NPS and NNM iSPI Performance for Metrics after installing NNMi and the NNM iSPI for IP Multicast.
Solution: Always install NPS and NNM iSPI Performance for Metrics and then install the NNM iSPI for IP Multicast. If you have installed NNMi and the NNM iSPI for IP Multicast before installing NPS and NNM iSPI Performance for Metrics, remove the **<Extension Pack>.processed** copy from the following location:
`<$NnmDataDir>/shared/perfSpi/datafiles/extension/finalfolder.`
`<%NnmDataDir%>\shared\perfSpi\datafiles\extension\final folder`
After removing the file, the extension packs are installed automatically.
- *Problem:* The NNM iSPI for IP Multicast jboss stops automatically after the start up or after running for some time. You cannot access the IP Multicast inventory and URL actions. The following log message appears in the console:

```
[org.jboss.system.server.Server] Shutting down the server, blockingShutdown: false  
[org.jboss.system.server.Server] Server exit(0) called  
[org.jboss.system.server.Server] Runtime shutdown hook called, forceHalt: true
```

Solution: Stop and start the NNM iSPI for IP Multicast jboss. Run the following commands:

- Stop the process: `ovstop -c mcastjboss`
- Start the process: `ovstart -c mcastjboss`

Uninstalling the NNM iSPI for IP Multicast

- **Problem:** The removal process starts but does not complete.
Solution: Stop the NNM iSPI for IP Multicast process and then start removing the NNM iSPI for IP Multicast. You can use the commands to stop the NNM iSPI for IP Multicast processes: `ovstop -c mcastjboss`. Check the status again and start the uninstallation process.
- **Problem:** After removing the NNM iSPI for IP Multicast, the memory of the system is still low.
Solution: Check if the `javaprocess` is running with the NNM iSPI for IP Multicast name. Stop and delete these processes manually. These processes increase the memory size.
- **Problem:** After removing the NNM iSPI for IP Multicast, the status of `mcastjboss` appears as `Failed`.
Solution: Run the following commands:
 - Stop the process: `ovstop -c`
 - Start the process: `ovstart -c`

If you check NNMi status again, `mcastjboss` does not appear in the status.

- **Problem:** After you uninstall the NNM iSPI for IP Multicast, the extension packs introduced by the NNM iSPI for IP Multicast are not removed. If the NNM iSPI Performance for Metrics is running, the extension packs introduced by the NNM iSPI for IP Multicast, still appear. You must remove the extension packs manually before you start installing the NNM iSPI for IP Multicast again.
Solution: To remove the extension packs completely, follow these steps:
 - a. Remove the extension packs using the `uninstallExtensionPack.ovplcommand`:

```
%PerfSPIInstallDir%\NNMPerformanceSPI\bin\uninstallExtensionPack.ovpl -p  
$PerfSPIInstallDir\NNMPerformanceSPI\bin\uninstallExtensionPack.ovpl -p
```

For example, use the command to uninstall the IP Multicast extension pack, `uninstallExtensionPack.ovpl -p IP_Multicast_Interface`.
For more information, see *NNM iSPI Performance for Metrics, 10.10 Installation Guide*.
 - b. Manually delete all the extension packs introduced by the NNM iSPI for IP Multicast from the following location:

```
$NnmDataDir\shared\perfSpi\datafiles\extension\final  
%NnmDataDir%\shared\perfSpi\datafiles\extension\final
```
 - c. Stop and start the processes of NNMi NNM iSPI Performance for Metrics.

Additional Troubleshooting Information

- **Problem:** The NNM iSPI for IP Multicast does not discover IPv6-enabled multicast nodes.

Solution: Update the `run.sh` file to enable the discovery of the IPv6-enabled multicast nodes. The `run.sh` file contains the following line:

```
JAVA_OPTS="$JAVA_OPTS -Djava.net.preferIPv4Stack=true"
```

To update the `run.sh` file, follow these steps:

- a. Stop the IP Multicast processes by using the command: `ovstop -c mcastjboss`.
- b. From the `/opt/OV/multicast/bin/` location, open the `run.sh` file.
- c. Update the following `java opt` parameter from: `-Djava.net.preferIPv4Stack=true` to `-Djava.net.preferIPv4Stack=false`.

The updated line appears as:

```
JAVA_OPTS="$JAVA_OPTS -Djava.net.preferIPv4Stack=false"
```

- d. Restart the IP Multicast processes by using the command: `ovstart -c mcastjboss`.

Troubleshooting Guidelines

- **Problem:** For the large scale Linux systems, when the NNM iSPI for IP Multicast and NNMi open the lot processes and files and the file count reaches to a maximum value, the NNM iSPI for IP Multicast stops working and is in an unusable state.

Solution: Increase the number of open files per process by updating the default max open files value.

To increase the value, follow these steps:

- a. Update the `limits.conf` file from the `/etc/security/limits.conf` file. Change the value to 2048 from the following:

```
Increase the default max open files for NNMi
```

```
soft nofile 2048
```

```
hard nofile 2048
```

- b. Save the updated values.
- c. Log out from the system and log on again. This file limit change is only applicable to the new shells.
- d. Restart NNMi from the following commands:
 - `ovstop -c`
 - `ovstart -c`

This restart of NNMi is required only if you have already installed NNMi.

Note: Perform these tasks before you start installing NNMi as the installer inherits the new file limits.

Post Installation Troubleshooting Guidelines

- **Problem:** After successfully installing the NNM iSPI for IP Multicast, the URL actions are not appearing.

Solution: To use the NNM iSPI for IP Multicast URL actions, follow these steps:

- a. Log out of the NNMi console and log on again.
- b. Restart the NNMi jboss by using the following commands:
 - `ovstop -c`
 - `ovstart -c`

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