

HP Network Node Manager iSPI for IP Multicast Software

for the HP-UX, Linux, Solaris, and Windows® operating systems

Software Version: 9.10

Installation Guide

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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 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 iSPI for IP Multicast.

The 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. Navigate to the 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

After you install (and configure) the 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 iSPI for IP Multicast.

IP Multicast Workspace

The 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 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 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 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.

2 Before you Begin

Before you start installing the 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 iSPI for IP Multicast in High-Availability (HA) cluster environments and application failover environments that are supported by NNMi. For more information, see *iSPI for IP Multicast Deployment Guide*.

Before you begin the 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 iSPI for IP Multicast installation process.

Preinstallation Tasks

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

Task 1: [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 iSPI for IP Multicast. Do not use the NNMi system account while installing the iSPI for IP Multicast.

For more information about creating users, see *NNMi Help, Configure NNMi User Accounts (User Account Form)*.

Task 2: *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 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 username created to access NNMi data.

Password: Password for the above mentioned user. Create the Oracle password to be used at time of iSPI for IP Multicast installation.

For more information, see *NNMi Installation Guide, Database Installation*.

Task 3: *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 iSPI for IP Multicast. While installing and configuring the iSPI for IP Multicast, do not use the same Oracle instance that was configured with NNMi.

Preparing for Installation

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

See the *HP Network Node Manager iSPI for IP Multicast Support Matrix* and *HP Network Node Manager iSPI for IP Multicast Release Notes* documents for complete information about the hardware and software requirements and dependencies.

Table 1 Preinstallation Checklist for Hardware and Software Requirements

Requirement	Reference Document	Complete(Yes/No)
Disk space	Support Matrix	Yes
Operating system	Support Matrix	Yes
Database	Support Matrix	Yes

3 Installing the iSPI for IP Multicast

You can install the iSPI for IP Multicast on both types of management servers—Windows and UNIX. You can use the installation wizard, which guides you through the installation process.

Installing on a Management Server

To install the iSPI for IP Multicast on a Windows or UNIX management server, follow these steps:


- 1 For a Windows management server, log on to the management server with `Administrator` privileges. For a UNIX management server, log on to the management server with `root` privileges.
- 2 Insert the 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` (for Windows) or `setup.bin` (for UNIX) file. The installation wizard opens.

If the Application requirement check warnings dialog box opens, click and review each warning, and take appropriate actions.

- 3 In the **Introduction** screen, check the iSPI for IP Multicast information, and then click **Next**.
- 4 On the **License Agreement** page, check the iSPI for IP Multicast license terms. If you agree with the terms of the license agreement, click **I accept...**; and then click **Next**. On the **Select the Installation Type** screen, select **Typical**; then click **Next**.


- 5 From the **Choose the database type** screen, select one of the following options:
 - ▶ Make sure to select the same database type (embedded or Oracle) that you have selected while installing NNMi.
 - Select **HP Software Embedded Database**, and click **Next**. The **Install Checks** screen appears. Go to [step 10](#) on page 17.
 - Select **Oracle**, and then click **Next**.
- 6 *Skip the steps from 6 through 9 if you choose to use the embedded database.* If you select an Oracle database, from the **Choose Database Initialization Preferences** page, choose any one of the following:
 - ▶ Select the same database type (Primary Server or Secondary Server) as NNMi.
 - **Primary Server Installation** - Select this option for installing the iSPI for IP Multicast on the primary server.
 - **Secondary Server Installation** - Select this option for installing the iSPI for IP Multicast in an Application Failover or High Availability (HA) environment.
- 7 Click **Next**. From **Enter your database server information** page, specify the following information that you have used while creating a new Oracle instance for the iSPI for IP Multicast:
 - **Host** - The fully-qualified domain name of the Oracle server. Type the server name.
 - **Port** -The default Oracle port number (1521) that appears in the dialog box.
 - **Instance** - Type the name of the Oracle database instance.
- 8 Click **Next**. Type the following information that you have used while creating a new Oracle instance for the iSPI for IP Multicast:
 - **Username** - Type the Oracle username created to access IP Multicast data.
 - **Password** - Type the password for the mentioned user.
- 9 Click **Next**. After completing the Oracle database configuration, click **OK**.

- 10 The **Install Checks** screen appears. If the configuration process reports an error, check the credentials. To type the database instance information again, click **Previous**. The wizard checks for the available disk space. The Product Requirements screen shows the required disk space and available disk space on the machine. Check the indicated values.
- 11 Click **Next**. The **Pre-Install Summary** screen appears.
- 12 Review the options, and then click **Install**. The installation process begins.
- 13 Specify the following details in the **Multicast iSPI Configuration** dialog box:

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

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

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

 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 iSPI for IP Multicast, open the `nms-local.properties` file and check the `jboss.http.port` value from the `NnmDataDir\conf\nnm\props` directory for Windows and `NnmDataDir/conf/nnm/props` directory for UNIX platforms. To update the NNMi port number, see [Updating the NNMi Port Number](#) on page 25.
- **NNMi HTTPS Port:** The NNMi HTTPS port number appears. The default value is 443. To verify or modify the port number after installing the iSPI for IP Multicast, open the `nms-local.properties` file and check the `jboss.https.port` value from the `NnmDataDir\conf\nnm\props` directory for Windows and

NnmDataDir/conf/nnm/props directory for UNIX platforms. To update the NNMi port number, see [Updating the NNMi Port Number](#) on page 25.

- **NNMi Java Naming and Directory Interface (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 iSPI for IP Multicast, open the `nms-local.properties` file and check the `jboss.jnp.port` value from the *NnmDataDir\conf\nnm\props* directory for Windows and *NnmDataDir/conf/nnm/props* directory for UNIX platforms. To update the NNMi port number, see [Updating the NNMi Port Number](#) on page 25.
- **Web Service Client Username:** Type the Web Service Client username.
- **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)
 - ▶ The various cases for the (Fully Qualified Domain Name (FQDN) configuration parameters are listed below:
 - The NNMi and iSPI for IP Multicast must use the same FQDN. If the NNMi server uses more than one domain name, installation process chooses one and 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 `nnmofficialfqdn.ovpl` command.
 - From the NNMi console, click **Help > About Network Node Manager i Software**.
 - 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, 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 Number** - 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 Number** - 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 iSPI for IP Multicast uses HTTP. This option specifies the mode of transmission such as secure or non-secure.
- ▶ Always select the same mode of transmission for NNMi and iSPI for IP Multicast.

- 14 Click **Submit** to proceed with the installation process.
- 15 When the installation process is complete, click **Done**. You can start the IP Multicast processes. For more information about processes, see [Starting and Stopping the NNMi and iSPI for IP Multicast Processes](#) on page 20.

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.

Starting and Stopping the NNMi and 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 by the following command:

```
ovstart -c ovjboss
```

- Start the Multicast process by the following command:

```
ovstart -c mcastjboss
```

- Stop the Multicast process by the following command:

```
ovstop -c mcastjboss
```

Verifying the NNMi and iSPI for IP Multicast Processes

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

Removing the 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. If the Multicast process is running, removal process exits with an error message. .



Always uninstall the iSPI for IP Multicast and then uninstall NNMi.

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

- 1 Log on to the management station.
- 2 Run the following command:

On Windows:

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

On UNIX:

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

A 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**.

Installing in a High-Availability or Application Failover Environment

You can install 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 Deployment Reference* guide.

License-related Information

The iSPI for IP Multicast includes a temporary Instant-On license key that is valid for 60 days after you install the iSPI for IP Multicast. You should obtain and install a permanent license key as soon as possible.

The three types of the iSPI for IP Multicast licenses are:

- Instant-on - The Instant-on license is an evaluation license. The valid period of this license is sixty days.
- Points Based - The Points-based license is the actual points consumed by the iSPI for IP Multicast. The points appear in the iSPI for IP Multicast system information.
- Migration - The migration licenses are valid only for the user updating from previous versions (7.xx) of the iSPI for IP Multicast.

Checking the License Type

To find the iSPI for IP Multicast license information, use any *one* of the following:

- 1 In the NNMi console, click **Help -> About Network Node Manager i Software**.
- 2 In the About Network Node Manager window, click **Licensing Information**.

OR

- 1 In the NNMi console, click **Help -> System Information**.
- 2 From the System Information box, click **View Licensing Information**.

Checking the IP Multicast Object-related Point Usage

- 1 In the NNMi console, click **Help -> Help for NNM iSPIs -> iSPI for IP Multicast System Information**.
- In the iSPI for IP Multicast window, click the **License Report** tab and the **Topology Statistics** tab. The base template points for the iSPI for IP Multicast are 1500 points. The License report tab shows the total points used for the IP Multicast topology object. Each multicast node consumes

five points and each multicast flow consumes four points. The Topology Statistics tab shows the total number of Multicast objects monitored by the iSPI for IP Multicast.

Before You Obtain iSPI License Points Pack

Before obtaining an iSPI for IP Multicast license points pack, do the following:

- 1 Count the number of multicast nodes and flows in your environment.
- 2 Determine the iSPI points required to monitor your environment.

Total iSPI points = total multicast nodes x 5 + total multicast flows x 4 + 1500 (the base template points for the iSPI for IP Multicast).

Installing a Permanent License

To install a permanent license, follow these steps:

- 1 Note the following details:
 - HP product number and order number (available on the Entitlement Certificate)
 - IP address of the NNM management station
 - Your company or organization information
- 2 Install the license of iSPI for IP Multicast by using any *one* of the methods:
 - At the command prompt from the NNMi management server, use the following:
 - Windows: `%NnmInstallDir%\bin\nnmlicense.ovpl <MCSPI> -f <license_file>`
 - UNIX: `/opt/OV/bin/nnmlicense.ovpl <MCSPI> -f <license_file>`

For more information, see `nnmlicense.ovpl` reference page.
 - For the Autopass user interface, use the following:
 - Windows:
 - `%NnmInstallDir%\bin\nnmlicense.ovpl MCSPI -gui`

- `%NnmInstallDir%\bin\nmlicense.ovpl MCSPI -g`
- UNIX:
- `/opt/OV/bin/nmlicense.ovpl MCSPI -gui`
- `/opt/OV/bin/nmlicense.ovpl MCSPI -g`

After you install your license from Autopass user interface, close the license window. The license points appear in the iSPI for IP Multicast system information only after you close the window.

- 3 Follow the instructions to install the license key.

Extend the IP Multicast Licenses

To extend the licensed capacity, purchase and install an additional iSPI for IP Multicast license. Contact your HP Sales Representative or your Authorized Hewlett-Packard Reseller for information about the iSPI for IP Multicast licensing structure and to learn how to add license tiers for enterprise installations.

To obtain additional license keys, go to the HP License Key Delivery Service:

<https://webware.hp.com/welcome.asp>

Accessing the Log Files

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

- For Windows: `%temp%`
- For Unix: `/tmp/`

List of IP Multicast log files

The log files are as follows:

- `HPOvMCastiSPI_9.10.000_HPOvInstaller.txt`
- `preInstall_mcast.log`

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

Updating the NNMi Port Number

At the time of 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 iSPI for IP Multicast installation, follow these steps:

- Update the `Djboss.nnm.port` field in `nms-multicast.ports.properties` file.
- Update the `com.hp.ov.nms.spi.multicast.Nnm.port` field in `nm.extended.properties` file.

The files are available in the following directory:

For Windows:

```
%nnmdatadir%\shared\multicast\conf\
```

For UNIX:

```
$nnmdatadir/shared/multicast/conf/
```

Updating the iSPI for IP Multicast HTTP and HTTPS Port Numbers

After installing NNMi and iSPI for IP Multicast, if you want to modify the iSPI for IP Multicast HTTPS or HTTP port numbers without installing the NNMi and iSPI for IP Multicast again, follow these steps:

- 1 Stop the processes of NNMi and iSPI for IP Multicast with the following commands:
 - **`ovstop -c mcastjboss`**

- **ovstop -c**
- 2 Open the `nms-mcast.ports.properties` file from the `%NnmDataDir%\shared\multicast\conf` or `$NnmDataDir/shared/multicast/conf` directory and update the following values:
 - *Djboss.http.port* value for the HTTP port
 - *Djboss.https.port* value for the HTTPS port
 - 3 Restart the NNMi and iSPI for IP Multicast with the following command:
 - **ovstart -c**

Updating the Security Mode (HTTP to HTTPS)

After installing NNMi and iSPI for IP Multicast, you can modify the security mode from HTTPS to HTTP or HTTP to HTTPS without installing NNMi and 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` or `$NnmdataDir/shared/multicast/conf` directory (depending on the type of the management server) 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.



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

Updating the NNMi System Password

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

➤ Only users with root permission can run this script.

- 3 Restart the iSPI for IP Multicast with the following commands:

- **ovstop -c mcastjboss**
- **ovstart -c mcastjboss**

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

The 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.

➤ 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 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 iSPI for IP Multicast password.

- 3 Restart the iSPI for IP Multicast with the following commands:

- **ovstop -c mcastjboss**
- **ovstart -c mcastjboss**

4 Upgrading to the iSPI for IP Multicast Version 9.10

Before you start upgrading the iSPI for IP Multicast from 7.5x, 8.x, or 9.x to newer version, make sure that you upgrade NNMi 7.x, 8.x, or 9.x series to 9.1x series. For upgrading NNMi from earlier versions, see the *NNMi Deployment Reference*.

License for Upgrading from the Earlier Versions

If you are upgrading from the earlier versions of the iSPI for IP Multicast, then you can obtain the iSPI for IP Multicast, 9.10 upgrade licenses. You can contact HP sales to know about your upgrade license entitlement based on your order number for the earlier versions of the iSPI for IP Multicast.

License for Upgrading from the Version 7.53 to Version 9.10

To upgrade to the iSPI for IP Multicast, the Contract Migration is required. The Special Migration SKUs are available from **http://support.openview.hp.com/software_updates.jsp**. The iSPI for IP Multicast, 9.10 is password protected product so you have to acquire your technical password migration. You can obtain your password from the following URL **http://support.openview.hp.com/software_updates.jsp**.

License for Upgrading from the Version 8.10 or 9.00 to Version 9.10

To upgrade to the iSPI for IP Multicast, 9.10 from versions 8.10 or 9.00, the Contract Migration is *not* required as all these versions use the same LTU's SKU. You only need the media product number. The iSPI for IP Multicast, 9.10

is password protected product, so you have to acquire your technical password migration. You can obtain your password from the following URL **http://support.openview.hp.com/software_updates.jsp**.

Upgrading from Version 7.53 to Version 9.10

The Multicast SPI, 7.53 is supported on UNIX 32 bit platform in contrast to the iSPI for IP Multicast, 9.10 which is supported on UNIX and Windows 64 bits platform. For more information about the supported database, hardware and software requirements, see the *iSPI for IP Multicast, Support Matrix, 9.10*.

There are no direct steps available for upgrading the Multicast SPI, 7.53 to the iSPI for IP Multicast, 9.10.

To upgrade the data from Multicast SPI, 7.53 to the iSPI for IP Multicast, 9.10, follow these steps:

- 1 Upgrade the community string and SNMP configuration such as retry count and response interval from NNM 7.5x to NNMi 9.10. For more information, see the *NNMi Deployment Reference*. Make sure to upgrade the community string information of the Multicast nodes.
- 2 Upgrade the list of Multicast devices (7x) by providing the list of multicast nodes as discovery seeds to NNMi. A discovery seed is an IP address or hostname. The discovery seeds (IP addresses or hostnames) for Multicast SPI, 7.53 are available in `/var/opt/OV/share/conf/managed.mmon`. You can seed the nodes in NNMi, 9.10 by using the following command: **`nnmloadseeds.ovpl -f < seed file>`**. For more information, see *Help for NNMi and NNMi Deployment Guide*.
- 3 Note the polling intervals of the IP Multicast devices as configured in IP Multicast SPI, 7.53. Use **IP Multicast Configuration** workspace from **NNMi Configuration** workspace to configure the polling intervals for the Multicast nodes. The default polling interval for the Multicast nodes is 10 minutes. After upgrading from Multicast SPI, 7.53 to the iSPI for IP Multicast, 9.10, the polling interval changes to 10 minutes.

To upgrade the data from Multicast SPI, 7.53 to the iSPI for IP Multicast, 9.10, follow the table:

Configuration File Name	Upgrade to the iSPI for IP Multicast, 9.10
managed.mmon	The discovery seeds (IP addresses or hostnames) for Multicast SPI, 7.53 are available in <code>/var/opt/OV/share/conf/managed.mmon</code> . You can seed the nodes in NNMi, 9.10 by using the following command: <code>nnmloadseeds.ovpl -f < seed file></code> . For more information about the command, see <i>NNMi Deployment Reference</i> .
mcollect.conf	There is no direct migration available for the iSPI for IP Multicast, 9.10. Make a copy of this configuration file.
Mgroup.conf	No migration is required for this configuration file. You can access the Forwarding Tree map view and Reverse Path map view from the IP Multicast workspace.
Minventory.conf	No migration is required for this file. You can access the inventory views from the iSPI for IP Multicast, 9.10.
Mmon.conf	There is no direct migration available for this configuration file in the iSPI for IP Multicast, 9.10. Make a copy of this configuration file.
mmon_ma.conf	No migration is required for this file. The details of the Designated Router (DR) are available in the PIM Interface details form.

Upgrading from Version 8.10 to Version 9.10

To upgrade the iSPI for IP Multicast from version 8.10 to version 9.10, follow these steps:

- 1 Uninstall the 8.10 version of the iSPI for IP Multicast.
- 2 Install NNMi 9.10.
- 3 Install the iSPI for IP Multicast, 9.10.

Upgrading from Version 9.00 to Version 9.10



When you upgrade to Version 9.10, the migration of software and configuration take place. The data migration does not take place. You have to re-discover your multicast devices.

If you upgrade iSPI for IP Multicast on a Linux management server from version 9.00 to version 9.10, you must import the HP public key into the Linux RPM database before upgrading to version 9.10. To do this, point your browser to the following location and follow the instructions:

[https://h20392.www2.hp.com/portal/swdepot/
displayProductInfo.do?productNumber=HPLinuxCodeSigning](https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning)



If you plan to upgrade iSPI for IP Multicast on HP-UX platform, see *NNMI Release Notes* and perform the additional steps required for HP-UX platform before upgrading from version 9.00 to version 9.10.

To upgrade the iSPI for IP Multicast from version 9.00 to version 9.10, follow these steps:

- 1 For a Windows management server, log on to the management server with Administrator privileges. For a UNIX management server, log on to the management server with root privileges.
- 2 Upgrade NNMi from version 9.00 to version 9.10. After the upgrade of NNMi to version 9.10, ensure that Mcast jboss is running.

- 3 Insert the iSPI for IP Multicast installation media into the CD-ROM drive. The CD-ROM starts automatically. If the installation does not start, double-click the `setup.bat` (for Windows) or `setup` (for UNIX) file. The installation wizard opens.

If the Application requirement check warnings dialog box opens, click and review each warning, and take appropriate actions.

- 4 In the **Introduction (Upgrade)** screen, check the iSPI for IP Multicast information, and then click **Next**.
- 5 On the **License Agreement** page, check the iSPI for IP Multicast license terms. If you agree with the terms of the license agreement, click **I accept...**; and then click **Next**. On the **Feature Selection** screen, click **Next**.
- 6 In the **Install Checks** screen, click **Next**.
- 7 Click **Upgrade** to start the upgrade process.
- 8 When the upgrade process is complete, click **Done**.
- 9 For Oracle databases, delete the iSPI for IP Multicast database user and recreate the same user. For embedded databases, the software takes care of database requirements automatically.
- 10 Start Mcast jboss by using the command: `ovstart -c mcastjboss`.
- 11 Import the config data by running the following command:
 - On Windows:
`%NnmInstallDir%\bin\nmsmulticastconfigimport.ovpl`
 - On Linux:
`$(NnmInstallDir)/bin/nmsmulticastconfigimport.ovpl`

Product Comparison

You can compare the features of the iSPI for IP Multicast, 9.10 with the earlier versions of the iSPI for IP Multicast. This section helps you to understand the product when you are upgrading from the earlier versions.

IP Multicast Router Features	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
IP Multicast router discovery and management	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Inventory view for the IP Multicast routers in the network.	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Discovery of the RPF interfaces and RPF neighbors	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Inventory of RPF interfaces and the RPF neighbors per router	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
RP (Rendezvous Point) discovery	<i>Yes</i>	<i>NA</i>	<i>Yes</i>	<i>Yes</i>
Management mode settings for routers	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Router status impact analysis	<i>Yes</i>	<i>NA</i>	<i>Yes</i>	<i>Yes</i>
Discovery filter for the Multicast routers	<i>Yes</i>	<i>NA</i>	<i>No</i>	<i>No</i>
Monitoring filter for MC routers	<i>Yes</i>	<i>NA</i>	<i>No</i>	<i>Yes</i>

Comparing the PIM Interfaces Features

IP Multicast PIM Interfaces Features	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
Discovery and management of the IP Multicast-enabled PIM interfaces.	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PIM Interfaces inventory view	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PIM Interface neighbor discovery	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PIM Interface neighbors inventory per PIM Interface	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PIM Interface status monitoring	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
PIM Interface neighbor status monitoring	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Designated Router (DR) discovery	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Neighbor view (map-based) for PIM neighbor adjacency	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>

Comparing the Multicast Groups/flows Features

IP Multicast Groups and Flows Features	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
Discovery of the Multicast Groups per router.	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Inventory of all the multicast groups per router.	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Group route monitoring	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Threshold-based incidents for Group Activity Monitoring	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
On-demand Multicast Group discovery per router	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Discovery of all the active Multicast flows in the network	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Inventory view of all ((S, G) and (*, G))	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Continuous monitoring of the IP Multicast flows (Group activity Monitoring)	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Multicast forwarding tree (map-based) view for a specific flow	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Reverse path (map-based) view for a specific flow	<i>Yes</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Facility to find a subscriber for a given group	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Multicast receiver management (IGMP)	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Instant monitoring of a flow	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>
Management mode settings for flows	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes</i>

Comparing the Reporting and Data Collection

Reporting and Data Collection Features	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
IP Multicast Interfaces TopN reports	Yes	No	Yes	Yes
IP Multicast Flows TopN reports	No	No	Yes	Yes
IP Multicast Group Traffic reports	Yes	No	Yes	Yes

Comparing the Platforms and Devices

Devices Support and Platform Support	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
Cisco support (IOS)	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Cisco support (IOS-XR)	<i>Yes</i>	No	<i>Yes</i>	<i>Yes</i>
Juniper M/T/J series support (JunOS)	<i>Yes</i>	No	<i>Yes</i>	<i>Yes</i>
Juniper E-series support (JunOSe)	<i>Yes</i>	No	No	<i>No</i>
Alcatel support	<i>Yes</i>	No	No	<i>Yes</i>
Foundry support	No	No	No	<i>No</i>
Windows OS Support	No	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Unix OS Support (HPUX, Solaris, Linux)	<i>Yes</i>	No	<i>Yes</i>	<i>Yes</i>

Additional Features

Features in the iSPI for IP Multicast, 9.10	Version 7.x	Version 8.x	Version 9.0x	Version 9.1x
MVPN Support*	No	No	Yes	Yes
RP Management and Monitoring	Yes	No	No	Yes
Multi-site multicast connectivity	No	No	No	Yes
Access Control**	No	No	No	Yes

**In integration with Network Node Manager iSPI for MPLS Software.*

***Control access to the iSPI for IP Multicast through user groups, security groups, and tenants.*

5 Getting Started with the iSPI for IP Multicast

After you complete the installation of the iSPI for IP Multicast in your NNMi environment, you can start monitoring your network with NNMi and iSPI for IP Multicast. After installing the 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 iSPI for IP Multicast

You can monitor the network by using the NNMi and iSPI for IP Multicast. To start the 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 iSPI for IP Multicast Help provides the iSPI for IP Multicast related information. The detailed information in the iSPI for IP Multicast help is organized into the following sections:

- Help for Operators
- Help for Administrators

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

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

Accessing the IP Multicast Configuration Workspace

You can perform the following configuration tasks after installing the 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 iSPI for IP Multicast uses the basic capabilities of the HP NNMi iSPI Performance for Metrics (iSPI Performance for Metrics) and Network Performance Server (NPS) to present the IP Multicast reports. Install the iSPI Performance for Metrics and Network Performance Server (NPS) from DVD and then install the iSPI for IP Multicast to view the IP Multicast reports.

The iSPI for IP Multicast introduces the following extension packs:

- IP_Multicast_Interface
- IP_Multicast_Flow

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

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

For more information, see *Help for iSPI for IP Multicast Reports and Help for NNMi iSPI Performance for Metrics*.

Accessing the iSPI for IP Multicast Reportlets

In large networks, generating reports is a time consuming effort. The reportlets are quick impressions of the larger reports. You can generate the reportlets using the iSPI Performance for Metrics Dashboards.

To launch the IP Multicast reportlets:

- 1 From the iSPI for IP Multicast console, select **Actions -> Reporting - Report Menu**. NPS home page opens.
- 2 On the NPS home page, select **Dashboard Reportlets -> iSPI IP Multicast**.
For IP Multicast interface reportlets, select **IP_Multicast_Interface -> InterfaceMetrics**.
For IP Multicast flow reportlets, select **IP_Multicast_Flow -> GroupMetrics**.
- 3 Select a reportlet type (for example, Calendar or Heat Chart).

A Troubleshooting the iSPI for IP Multicast

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

Installing the iSPI for IP Multicast

- *Problem:* The 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 iSPI for IP Multicast process appears in the `Failed` state and you are not able to restart the process again.

Solution: Stop and start `ovsppmd` (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 iSPI for IP Multicast fail to start if you install NPS and iSPI Performance for Metrics after installing NNMi and iSPI for IP Multicast.

Solution: Always install NPS and iSPI Performance for Metrics and then install the iSPI for IP Multicast. If you have installed NNMi and iSPI for IP Multicast before installing NPS and iSPI Performance for Metrics, remove the `<Extension Pack>.processed` copy from the following location:

On UNIX - `<$NNMDataDir>/shared/perfSpi/datafiles/extension/finalfolder`.

On Windows

-<%NNMDataDir%>\shared\perfSpi\datafiles\extension\final folder.

After removing the file, the extension packs are installed automatically.

- *Problem:* The 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 iSPI for IP Multicast jboss. Run the following commands:

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

Uninstalling the iSPI for IP Multicast

- *Problem:* The removal process starts but does not complete.

Solution: Stop the iSPI for IP Multicast process and then start removing the iSPI for IP Multicast. You can use the commands to stop the iSPI for IP Multicast processes: **ovstop -c mcastjboss**. Check the status again and start the uninstallation process.

- *Problem:* After removing the iSPI for IP Multicast, the memory of the system is still low.

Solution: Check if the javaprocess is running with the iSPI for IP Multicast name. Stop and delete these processes manually. These processes increase the memory size.

- *Problem:* After removing the 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 iSPI for IP Multicast, the extension packs introduced by the iSPI for IP Multicast are not removed. If the iSPI Performance for Metrics is running, the extension packs introduced by the iSPI for IP Multicast, still appear. You must remove the extension packs manually before you start installing the iSPI for IP Multicast again.

Solution: To remove the extension packs completely, follow these steps:

- a Remove the extension packs using the `uninstallExtensionPack.ovpl` command:
 - Windows -
`%PerfSPIInstallDir%\NNMPerformanceSPI\bin\uninstallExtensionPack.ovpl -p`
 - UNIX - `$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 *NNMi iSPI Performance for Metrics, 9.10 Installation Guide*.

- b Manually delete all the extension packs introduced by the iSPI for IP Multicast from the following location:
 - For UNIX - `$NnmDataDir/shared/perfSpi/datafiles/extension/final`.
 - For Windows 2008/ Windows 2003 -
`%NnmDataDir%\shared\perfSpi\datafiles\extension\final`.
 - c Stop and Start the processes of NNMi iSPI Performance for Metrics.
- *Problem:* For the non-windows platforms, the mcastjboss does not start after increasing the heap size to 4GB and above. The message appears as Could not reserve enough space for object heap.

Solution: From the `/var/opt/OV/shared/multicast/conf/nms-multicast.jvm.properties` file, remove the comment from the `-d64` flag. The `Xmx` value is set to 4GB or above.

Additional Troubleshooting Information

The following information helps you to troubleshoot the problem you may encounter after installing the iSPI for IP Multicast.

- *Problem:* The 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/nonOV/multicast/jboss/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`**.

Linux Platform-related Troubleshooting Guidelines

- *Problem:* For the large scale Linux systems, when the iSPI for IP Multicast and NNMi open the lot processes and files and the file count reaches to a maximum value, the 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.



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 iSPI for IP Multicast, the URL actions are not appearing.

Solution: To use the 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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