HP Network Node Manager iSPI for IP Multicast

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

Software Version: 9.10

Deployment Reference

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1 Introducing the iSPI for IP Multicast

HP Network Node Manager i Software Smart Plug-in for IP Multicast (iSPI for IP Multicast) helps you extend the capability of NNMi to monitor the overall health of the network.

You can plan the deployment of the iSPI for IP Multicast based on how NNMi is deployed in the environment. While planning the deployment, consider the following areas to achieve an optimum size and performance of the system:

- Number of IP Multicast nodes, PIM interfaces, and IP Multicast flows.

- Deployment of the iSPI for IP Multicast in a High Availability (HA) environment

- Deployment of the iSPI for IP Multicast in an Application Failover environment

- Deployment of the iSPI for IP Multicast with other iSPIs (iSPI for MPLS and iSPI Performance for Metrics/NPS)

- Deployment of the iSPI for IP Multicast in a Global Network Management (GNM) environment.

Preparing for Deployment

Before you start deploying 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 configurations and ensure that all the prerequisites are met before you begin the installation process.

Factors that impact the deployment of the iSPI for IP Multicast include the type of database configured with NNMi and the size of the network that you want to monitor. In addition, ensure to install the latest NNMi patches before installing the iSPI for IP Multicast.

Read the following NNMi documents before you start installing and configuring the iSPI for IP Multicast:

- *HP Network Node Manager i Software Deployment Guide, 9.10*

- *HP Network Node Manager i Software Release Notes, 9.10*

- *HP Network Node Manager i Software Support Matrix, 9.10*

In addition, read the following iSPI for IP Multicast documents before you start deploying the iSPI for IP Multicast:

- *HP Network Node Manager Smart Plug-in for IP Multicast Installation Guide, 9.10*

- *HP Network Node Manager Smart Plug-in for IP Multicast Release Notes, 9.10*

- *HP Network Node Manager Smart Plug-in for IP Multicast Support Matrix, 9.10*

For current versions of all documents listed here, go to: **http://h20230.www2.hp.com/selfsolve/manuals.**

Environment Variables Used in the iSPI for IP Multicast Documents

The iSPI for IP Multicast documents use the following NNMi environment variables to refer to file and directory locations. The default values are listed here. Actual values depend upon the selections made during NNMi installation.

The NNMi installation process creates the following system environment variables:

- On Windows:

    — *%NnmInstallDir%*: `<drive>\Program Files\HP\HP BTO Software`

    — *%NnmDataDir%:* `<drive>\ProgramData\HP\HP BTO Software`

- On UNIX:

    — *$NnmInstallDir:* `/opt/OV`

— *$NnmDataDir:* `/var/opt/OV`

2 Deploying the iSPI for IP Multicast

The iSPI for IP Multicast and NNMi must be installed on the same management server. To install and configure NNMi on a management server, see the *NNMi Installation Guide and Deployment Reference Guide*.

You can deploy the iSPI for IP Multicast for the following scenarios:

- Installing NNMi and iSPI for IP Multicast together on a single server. NNMi and iSPI for IP Multicast are both configured together.

- Installing the iSPI for IP Multicast in a system where NNMi is already installed and configured.

- Installing the iSPI for IP Multicast in a Global Network Management environment.

- Installing NNMi, iSPI Performance for Metrics/ Network Performance Server (NPS), and iSPI for IP Multicast on the same management server.

- Installing NNMi and iSPI for IP Multicast on a management server and the iSPI Performance for Metrics/ NPS in a dedicated server.

Deploy the iSPI for IP Multicast and NNMi Together

To deploy NNMi and the iSPI for IP Multicast on a management server, follow these steps:

1 Complete the NNMi installation process.

2 Create a New User with the Web Service Client Role from the NNMi console.

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

▶ Make sure to use the same database type (Postgres Embedded database or Oracle) as NNMi when you are installing the iSPI for IP Multicast.

3   Install the iSPI for IP Multicast, 9.10. For more information, see the *iSPI for IP Multicast Installation Guide*.

4   Start the IP Multicast processes by using the command: `ovstart -c mcastjboss.`

5   After installing the iSPI for IP Multicast and starting the IP Multicast processes, log on to the NNMi console, and then verify the availability of the IP Multicast workspace and IP Multicast views.

6   Seed the IP Multicast nodes from the NNMi console. The discovery process starts after you seed the nodes and the iSPI for IP Multicast nodes are discovered along with NNMi nodes. For more information, see *NNMi Online Help*.

7   Wait for sometime till the iSPI for IP Multicast nodes are discovered. Navigate to the NNMi console to verify the availability of the IP Multicast workspace, IP Multicast views, and IP Multicast configuration workspace.

Deploy the iSPI for IP Multicast in an NNMi Environment

To deploy the iSPI for IP Multicast on a management server where NNMi is already installed and configured, follow these steps:

1   Install the iSPI for IP Multicast on a management server where NNMi is already installed, running, and nodes are discovered.

▶ Make sure to use the same database type (Postgres Embedded or Oracle) as NNMi when you are installing the iSPI for IP Multicast.

2   Start the IP Multicast process by using the command: `ovstart -c mcastjboss.`

3   You can start the discovery process to discover the IP Multicast nodes from the discovered NNMi nodes in any *one* of the following ways:

- Select all the IP Multicast nodes from NNMi inventory workspace and start the configuration poll. For more information, see *Help for NNMi*.

- Wait for the next NNMi discovery cycle to rediscover the nodes and also start the discovery of the iSPI for IP Multicast nodes.

- Run the command **nmsmulticastdisco.ovpl** to discover all multicast nodes.

4 After installing the iSPI for IP Multicast, log on to the NNMi console, and then verify the availability of the IP Multicast workspace, IP Multicast views, and IP Multicast configuration workspace.

Using Single Sign-On with NNMi

You can configure HP Network Node Manager i Software (NNMi) single sign-on (SSO) to facilitate access to the iSPI for IP Multicast Configuration workspace from the NNMi console without needing to log on again. SSO is not enabled during installation.

To enable SSO:

For Windows:

1 Edit the *%NNMDatadir%*\shared\nnm\conf\props\nms-ui.properties file. Change **com.hp.nms.ui.sso.isEnabled= "*false*"** to **com.hp.nms.ui.sso.isEnabled = "*true".***

2 Edit the *%NnmInstallDir%*\nonOV\multicast\jboss\server\nms\conf\lwssofmconf.xml file. Change **enableLWSSOFramework="*false*"** to **enableLWSSOFramework="*true*"**

For UNIX:

1 Edit the *$NNMDatadir*/shared/nnm/conf/props/ nms-ui.properties file. Change **com.hp.nms.ui.sso.isEnabled= "*false*"** to **com.hp.nms.ui.sso.isEnabled = "*true".***

2 Edit the *$NnmInstallDir*/nonOV/multicast/jboss/server/nms/ conf/lwssofmconf.xml file. Change **enableLWSSOFramework="*false*"** to **enableLWSSOFramework="*true*"**

For more information about SSO, see *NNMi Deploymentpoint Reference, Using Single Sign-On*.

Deploy the iSPI for IP Multicast with the iSPI Performance for Metrics/NPS

You must install NNMi 9.10, the iSPI of IP Multicast 9.10, NNM iSPI Performance for Metrics/Network Performance Server 9.10 to view the IP Multicast reports. You can deploy these products in the following scenarios:

- Installing NNMi, iSPI for IP Multicast, and the iSPI Performance for Metrics/NPS on the same server.

- Installing the iSPI for IP Multicast and NNMi on a management server and the iSPI Performance for Metrics/NPS on a dedicated server.

To deploy all the products on the same management server, follow these steps:

1   Install NNMi, 9.10.

2   Install the iSPI Performance for Metrics/NPS. 9.10. For information about the steps to install, see *HP NNMi iSPI Performance for Metrics/NPS Installation Guide*.

3   Install the iSPI for IP Multicast, 9.10.

➤ Always install the iSPI Performance for Metrics/NPS 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.

- UNIX:

  <$NNMDatadir>/shared/perfSpi/datafiles/extension/final folder.

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

Replace the <extension pack> in the *<Extension Pack>*.processed copy with the following:

- IP_Multicast_Flow
- IP_Multicast_Interface

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

To deploy NNMi and iSPI for IP Multicast on the same management server and the iSPI Performance for Metrics/NPS on a dedicated server, follow these steps:

1   Install NNMi, 9.10 and iSPI for IP Multicast, 9.10 on the same management server.

2   Install the iSPI Performance for Metrics/ NPS, 9.10 on a dedicated server.

3 Complete the necessary configurations for NNMi, iSPI for IP Multicast and iSPI Performance for Metrics/NPS.

➤ Always install the iSPI Performance for Metrics/NPS 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/ `final` folder.

- On Windows
  `<%NNMDatadir%>`\shared\perfSpi\datafiles\extension\fi `nal` folder.

Replace the <extension pack> in the `<Extension Pack>.processed` copy with the following extension pack:

- IP_Multicast_Flow
- IP_Multicast_Interface

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

After you complete the installations, the iSPI for IP Multicast introduces the following extension packs on the Metrics console:

Extension Pack Name	Purpose
IP_Multicast_Interface	Shows report for IP multicast traffic passing through the multicast nodes and Protocol-Independent Multicast (PIM) interfaces on the network.
IP_Multicast_Flow	Shows report for the IP multicast traffic for the selected flows.

The extension packs use data collected by the iSPI for IP Multicast. Make sure that the iSPI Performance for Metrics/ NPS is up and running. To view the IP Multicast reports from the NNMi console, click **Actions -> Reporting - Report Menu.** The iSPI Performance for Metrics console appears with the IP Multicast metrics and you can generate the IP Multicast reports.

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. For more information, see *Troubleshooting the iSPI for IP Multicast* section from the *iSPI for IP Multicast Installation Guide*.

Deploy the iSPI for IP Multicast in a High Availability Cluster Environment

You can install NNMi and iSPI for IP Multicast in a High Availability (HA) environment to achieve redundancy in your monitoring setup. The prerequisites to configure the iSPI for IP Multicast in an HA environment is similar to NNMi. For information, see *NNMi Deployment Reference*.

You can deploy the iSPI for IP Multicast for the following scenarios:

- Configuring NNMi and iSPI for IP Multicast together in an HA environment.
- Configuring the iSPI for IP Multicast in an NNMi environment.

Configuring NNMi and iSPI for IP Multicast Together in a High Availability Cluster Environment

You can configure NNMi and iSPI for IP Multicast on primary node and secondary node in an HA environment. Make sure that the primary and secondary servers have different Fully Qualified Domain Names (FQDN) during the installation. See the NNMi Installation Guide. For more information about how to install NNMi on an HA environment, see *NNMi Deployment Reference*.

Configure the iSPI for IP Multicast on the Primary Node

To configure the iSPI for IP Multicast on the primary node, follow these steps:

1   Install NNMi and then iSPI for IP Multicast. After you install the iSPI for IP Multicast, install the iSPI for IP Multicast production licenses. For more information, see **https://webware.hp.com/welcome.asp.**

2   Configure NNMi in an HA cluster environment on the primary node. For information, see *NNMi Deployment Reference*.

3   Run the following command from the $NNM_BIN directory to find the virtual hostname:

   *<NnmInstallDir>***/bin/nnmofficialfqdn.ovpl**

4   Modify the following files from the *$NnmdataDir*/shared/multicast/ conf/or *%NnmdataDir%*\shared\multicast\conf to show the Virtual FQDN instead of hostname:

File Name	Value
nms-multicast.jvm.properties	*<hostname>*.selfsigned
nms-multicast.address.propert ies	jboss.nnm.host=*<hostname>*
nms-multicast.jvm.properties	Djava.rmi.server.hostname=*<host name>*
nnm.extended.properties	com.hp.ov.nms.spi.multicast.nnm .hostname=*<hostname>*
nnm.extended.properties	com.hp.ov.nms.spi.multicast.spi .hostname=*<hostname>*

> *<hostname>* represents the actual value of the hostname.

5   If you have modified any files or folders specified in $NnmDataDir/ shared/nnm/conf/multicastdbdatareplicator.conf file, then replicate them on each cluster member. multicastdbdatareplicator.conf file contains the following folders:

   • NnmDataDir/shared/multicast/conf/logging.properties

   • NnmInstallDir/nonOV/multicast/jboss/server/nms/conf

6   Start the NNMi HA resource group by the following command:

- For Windows:

%NnmInstallDir%\misc\nnm\ha\nnmhastartrg.ovpl NNM\
<resource_group>

- For UNIX:

$NnmInstallDir/misc/nnm/ha/nnmhastartrg.ovpl NNM\
<resource_group>

For more information, see *NNMi Deployment Reference Guide*.

The iSPI for IP Multicast and NNMi must start after this step. If NNMi or the iSPI for IP Multicast do not start, see *Troubleshooting the HA Configuration from NNMi Deployment Reference*.

7 Configure the iSPI for IP Multicast by the following commands:

- For Windows:

%NnmInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl NNM -addon
MULTICAST

- For UNIX:

$NnmInstallDir/ misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon
MULTICAST

Configure the iSPI for IP Multicast on the Secondary Node

To configure the iSPI for IP Multicast on the secondary node, follow these steps:

1 Configure NNMi on the secondary node. For information, see *Configuring NNMi on the Secondary Cluster Node*. After you install the iSPI for IP Multicast, install the iSPI for IP Multicast non production licenses. For more information, see **https://webware.hp.com/welcome.asp.**

2 Modify the following files from the *$NnmdataDir*/shared/multicast/ `conf/` or *%NnmdataDir%*`\shared\multicast\conf` to show the Virtual FQDN instead of hostname:

File Name	Value
`nms-multicast.jvm.properties`	*<hostname>*`.selfsigned`
`nms-multicast.address.propert` `ies`	`jboss.nnm.host=`*<hostname>*
`nms-multicast.jvm.properties`	`Djava.rmi.server.hostname=`*<hostname>*
`nnm.extended.properties`	`com.hp.ov.nms.spi.multicast.nnm` `.hostname=`*<hostname>*
`nnm.extended.properties`	`com.hp.ov.nms.spi.multicast.spi` `.hostname=`*<hostname>*

▶ *<hostname>* represents the actual value of the hostname.

3 Configure the iSPI for IP Multicast on the secondary node by the following commands:

- For Windows:

%NnmInstallDir%`\misc\nnm\ha\nnmhaconfigure.ovpl NNM -addon` `MULTICAST`

- For UNIX:

$NnmInstallDir/ `misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon` `MULTICAST`

Configuring the iSPI for IP Multicast in an NNMi High Availability Cluster Environment

You can configure the iSPI for IP Multicast on the primary and secondary node in an NNMi HA cluster environment. For more information about how to install NNMi in an HA environment, see *NNMi Deployment Reference Guide*.

Configure the iSPI for IP Multicast on the Primary Node

Before you start configuring the iSPI for IP Multicast, make sure that NNMi is running on the primary node in an HA cluster environment. In addition, update the NNMi in the maintenance mode to prevent failover. Follow the steps documented in the *NNMi Deployment Reference* to put NNMi into the maintenance mode. Make sure that NNMi (ovjboss) is running by the following command: **ovstatus -c**.

To configure the iSPI for IP Multicast on the primary node, follow these steps:

1   Install the iSPI for IP Multicast.

2   Remove NNMi from maintenance mode. For information, see *Removing an HA Resource Group from Maintenance Mode* from the *NNMi Deployment Reference*.

3   Start configuring the iSPI for IP Multicast by the following commands:

   • For Windows:

   %NnmInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl NNM -addon MULTICAST

   • For UNIX:

   $NnmInstallDir/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon MULTICAST

4   Switch the HA application group of NNMi and the iSPI for IP Multicast to the secondary system.

Configure the iSPI for IP Multicast on the Secondary Node

Before you start configuring the iSPI for IP Multicast, make sure that NNMi is running on the secondary node in an HA cluster environment. In addition, change NNMi into the maintenance mode to prevent failover. Follow the steps documented in the *NNMi Deployment Reference* to put NNMi into the maintenance mode. Make sure that NNMi (ovjboss) is running by the following command: **ovstatus -c**.

To configure the iSPI for IP Multicast on the secondary node, follow these steps:

1   Start installing the iSPI for IP Multicast. Ignore the error messages and click **OK**.

2   Remove NNMi from maintenance mode. For information, see *Removing an HA Resource Group from Maintenance Mode* from the *NNMi Deployment Reference*.

3   Start configuring the iSPI for IP Multicast by the following commands:

   • For Windows:

   %NnmInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl NNM -addon MULTICAST

   • For UNIX:

   $NnmInstallDir/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon MULTICAST

4   To verify that you have configured the iSPI for IP Multicast on the secondary node, run the following command:

   • For Windows:

   %NnmInstallDir%\misc\nnm\ha\nnmhaclusterinfo.ovpl -config NNM -get NNM_ADD_ON_PRODUCTS

   • For UNIX:

   $NnmInstallDir/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get NNM_ADD_ON_PRODUCTS

   The output should have the node names in parentheses along with MULTICAST.

   For example, MULTICAST[*hasol1,hasol2*], where *hasol1* is the primary node and *hasol2* is the secondary node.

5   Switch the HA application group of NNMi and the iSPI for IP Multicast to the primary system.

When the Primary system fails-over to the Secondary standby system, the cluster software may bring down the NNMi on Primary unless it is a system failure. In such a scenario, sometimes the **ovstop** on "mcastjboss" may not be successful. After the fail-over from one cluster member to other member, make sure that the NNMi and iSPI for IP Multicast are stopped successfully on the failed system. Terminate the java process of mcastjboss. The corresponding java process for mcastjboss can be found using the **"ps"** command on Unix or *Task Manager* on Windows.

The timeout parameters on Cluster software must be tuned during the HA deployment. The important timeout parameters for Veritas Cluster Software are `OfflineTimeout`, `OnlineTimeout`, and `MonitorTimeout`. In the case of Windows Cluster Manager software, consider tuning `Pending Timeout` and `Deadlock Timeout` parameters. These parameters are to be modified accordingly when two or more iSPI addon products are installed as well.

Remove the iSPI for IP Multicast from a High Availability Cluster Environment

To remove the iSPI for IP Multicast from an HA cluster environment, first remove the iSPI for IP Multicast from the secondary node and then from the primary node.

To remove the iSPI for IP Multicast from an HA cluster environment, follow these steps:

1   Remove the iSPI for IP Multicast by the following command:

   • Windows:

   %NnmInstallDir%\misc\nnm\ha\nnmhaunconfigure.ovpl NNM -addon MULTICAST

   • For UNIX:

   $NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon MULTICAST

2   Remove NNMi from an HA cluster environment. For information, see *NNMi Deployment Reference.*

Deploy the iSPI for IP Multicast in an Application Failover Environment

You can deploy the iSPI for IP Multicast in an application failover environment by selecting the database from the following scenarios:

Deploying the iSPI for IP Multicast in an Application Failover Environment with Oracle Database

Scenario 1: In this deployment scenario, consider that you want to install the iSPI for IP Multicast with NNMi and then configure application failover on NNMi.

1   Install NNMi in the primary server mode on the server 1 and install NNMi in the secondary server mode on the server 2.

➤   If you are using Oracle as the database, NNMi provides you options to install NNMi on the primary and secondary server modes for deployment in an application failover or a high availability environment.

2   Start NNMi on server 1.

3   Install the iSPI for IP Multicast on server 1 with Oracle database by following the steps listed in the *HP Network Node Manager i Software Smart Plug-in for IP Multicast Installation Guide*.

4   Merge the keystores on one server and copy the keystores to both the primary and the secondary servers. For information, see the *NNMi Deployment Reference Guide* for instructions.

5   After the installation of the iSPI for IP Multicast, install the iSPI for IP Multicast non production license on server 1.

6   Stop NNMi on server 1.

7   Start NNMi on server 2.

8   Install the iSPI for IP Multicast on the server 2 with the same database instance, user name, and password as configured on the server 1.

9   Install the non production license available for the iSPI for IP Multicast on server 2.

10 Configure the iSPI for IP Multicast for an application failover between server 1 and server 2. The steps to configure the iSPI for IP Multicast for application failover are similar to the steps to configure NNMi for application failover. For information about how to configure the iSPI for application failover, see *NNMi Deployment Reference Guide*.

Scenario 2: In this scenario, consider that you want to install the iSPI for IP Multicast after configuring NNMi in an application failover environment:

1 Remove configuration for application failover from the NNMi primary and secondary servers.

2 Restore the old keystore and truststore specific to the primary server and the secondary server.

3 Install the iSPI for IP Multicast on both primary and secondary servers following the steps discussed in Scenario 1.

4 Install the non production licenses available for the iSPI for IP Multicast installed on a server 1 and a server 2.

5 Configure the iSPI for IP Multicast for an application failover. For information about how to configure the iSPI for application failover, see *NNMi Deployment Reference Guide*.

Deploying the iSPI for IP Multicast in an Application Failover Environment with Embedded Database

Scenario 1: In this scenario, consider that you want to install the iSPI for IP Multicast and NNMi in an application failover mode:

1 Install NNMi and iSPI for IP Multicast on the primary server and the secondary server.

2 Install the iSPI for IP Multicast non production licenses on both the servers.

3 Follow instructions given in the *NNMi Deployment Reference Guide* to configure NNMi in application failover mode. After this, the iSPI for IP Multicast automatically gets configured in the application failover mode.

Scenario 2: In this scenario, consider that you want to install the iSPI for IP Multicast after configuring NNMi in an application failover mode:

1 Remove the NNMi application failover configuration from the primary and secondary server.

2   Restore the old keystore and truststore specific to the primary server and the secondary server. For information, see the *NNMi Deployment Reference Guide*.

3   Install the iSPI for IP Multicast on both the primary and the secondary servers.

4   Install the iSPI for IP Multicast non production license on both the servers.

5   Configure the iSPI for IP Multicast for application failover.

6   Configure NNMi in the application failover mode. For more information about the steps to configure NNMi, *see NNMi Deployment Reference Guide*.

Deploy the iSPI for IP Multicast with the iSPI for MPLS

The iSPI for IP Multicast helps you to monitor the multicast services in the network. If the multicast services are used over an MPLS cloud, the integration of the iSPI for IP Multicast and MPLS provides the collaborative monitoring of an MVPN topology.

The iSPI for MPLS helps you to monitor the Provider Edge (PE) routers discovered in an MVPN topology. The PE routers are configured with the multicast-enabled VRF (MVRF) capabilities and use the multicast services to transmit data.

Navigate from the iSPI for MPLS to the iSPI for IP Multicast to view the multicast tree used by multicast traffic in the core network (cloud between the PE routers). The multicast tree shows the default and data Multicast Distribution Tree (MDTs). For more information, *see the iSPI for MPLS Online Help, Overview of the Multicast VPN (MVPN) and IP Multicast View*.

To deploy the iSPI for IP Multicast with the iSPI for MPLS, follow the steps:

1   Install NNMi 9.10.

2   Install the iSPI for IP Multicast, 9.10.

3   Install the iSPI for MPLS, 9.10.

There is no order to deploy the iSPIs (iSPI for MPLS or iSPI for IP Multicast) on a management server.

Deploy the iSPI for IP Multicast in Global Network Management Environment

You can deploy the iSPI for IP Multicast in a Global Network Management (GNM) environment. The iSPI for IP Multicast uses the capabilities of NNMi Global Manager (NNMi GM) and provides a centralized view to monitor the multiple sites. The iSPI for IP Multicast allows you to configure the regional manager connections by using the **IP Multicast Configuration** workspace. After the connection is established, view and monitor the IP Multicast nodes from the iSPI for IP Multicast inventory (GM). For more information about how to configure the iSPI for IP Multicast regional managers, see the *iSPI for IP Multicast Online Help*.

You can deploy NNMi and iSPI for IP Multicast in a GNM environment for the following scenarios:

- Both NNMi and iSPI for IP Multicast are configured on the global manager server and regional manager servers.

- NNMi is configured on the global manager server and NNMi and iSPI for IP Multicast are configured on the regional manager servers.

- Both NNMi and iSPI for IP Multicast are configured on the global manager server and only NNMi is configured on the regional manager server.

Deploying NNMi and iSPI for IP Multicast on the Global Manager and Regional Manager Management Server

You can install and configure NNMi and the iSPI for IP Multicast on the global manager and regional managers. For information about the configuration steps, see *NNMi and iSPI for IP Multicast Online Help*.

The following figure represents a deployment scenario, where NNMi and iSPI for IP Multicast is configured on the global manager (G1) and regional managers (R1, R2, and R3):
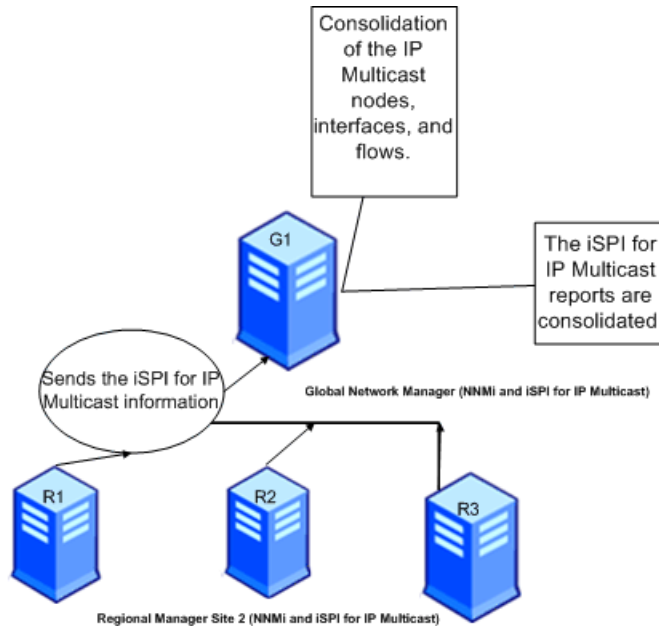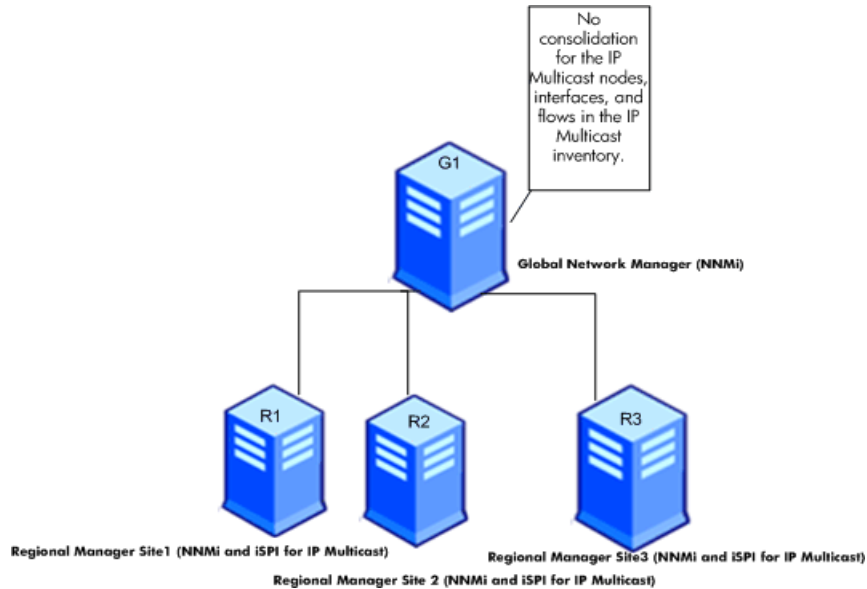

In this deployment scenario, all the regional managers (R1, R2, and R3) sends the IP Multicast information to the global manager (G1). You can view the following information is available from G1:

- Consolidated IP Multicast topology. The status of the IP Multicast nodes, interfaces, and PIM neighbors is calculated again in the global manager environment.

- Consolidated IP Multicast reports.

Deploying NNMi on the Global Manager and NNMi and iSPI for IP Multicast on the Regional Manager Management Server

You can install and configure NNMi on the global manager. Now, you can install and configure NNMi and iSPI for IP Multicast on the regional managers. For information about the configuration steps, see the *NNMi and iSPI for IP Multicast Online Help*.

The following figure represents a deployment scenario, where NNMi is configured on the global manager (G1). NNMi and the iSPI for IP Multicast are configured on the regional managers (R1, R2, and R3):
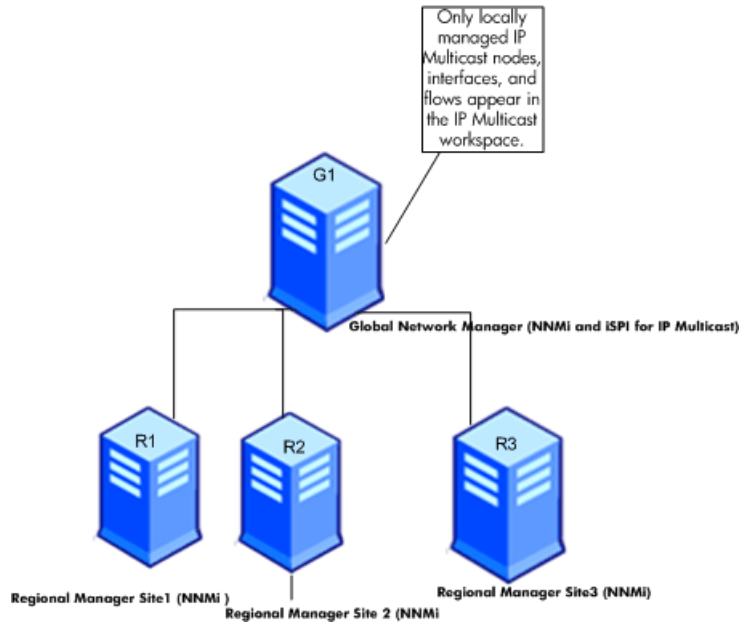

In this deployment scenario, all the regional managers (R1, R2, and R3) discover the IP Multicast nodes, interfaces, and flows. The iSPI for IP Multicast is not available on G1 so there is no communication established between G1 and regional managers for the iSPI for IP Multicast. Thus, the Multicast nodes, interfaces, and flows from the regional managers are not available in the G1 inventory. In addition, no aggregated IP Multicast reports are available in the IP Multicast (GNM) inventory.

Deploying NNMi and the iSPI for IP Multicast on the Global Manager and NNMi on the Regional Manager Management Server

You can install and configure NNMi and the iSPI for IP Multicast on the global manager and only NNMi on the regional managers. For information about the configuration steps, see in the *NNMi and iSPI for IP Multicast Online Help*.

The following figure represents a deployment scenario, where NNMi and iSPI for IP Multicast are configured on the global manager (G1) and NNMi on the regional managers (R1, R2, and R3):

Only locally managed IP Multicast nodes, interfaces, and flows appear in the IP Multicast workspace.

G1

Global Network Manager (NNMi and iSPI for IP Multicast)

R1   R2   R3

Regional Manager Site1 (NNMi)   Regional Manager Site3 (NNMi)

Regional Manager Site 2 (NNMi

In this deployment scenario, only the locally managed IP Multicast nodes, interfaces, and flows are available in the IP Multicast inventory (G1).

Deploying the Regional Manager in the Application Failover Environment

When the iSPI for IP Multicast regional manager is in the Application failover environment, use the **ORDER** parameter to decide the priority to establish the connection.

To use the regional manager in an application failover environment, follow these steps:

1   Configure the regional manager connection using IP Multicast configuration workspace.

2 Add the two regional manager connections and provide the two hostnames.

3 Use the **ORDER** parameter to give different values to the two regional managers.

Whenever there is an application fail-over available on the regional manager, the GNM establishes the next connection with the lowest order value.

You can configure the regional manager in the application failover environment by using the steps documented in the Deploying the iSPI for IP Multicast in an Application Failover Environment with Oracle Database on page 26 andDeploying the iSPI for IP Multicast in an Application Failover Environment with Embedded Database on page 27.

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