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For the full Oracle license text, see the license-agreements directory on the NNMi product DVD.

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(<http://www.apache.org>)

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1 Introduction

The HP Network Node Manager iSPI Performance for Traffic Software (NNM iSPI Performance for Traffic) extends the capability of HP Network Node Manager i Software (NNMi) to monitor the performance of the network.

The NNM iSPI Performance for Traffic enriches of the obtained data from the IP flow records that are exported by the routers in your NNMi network.

The NNM iSPI Performance for Traffic performs the following tasks:

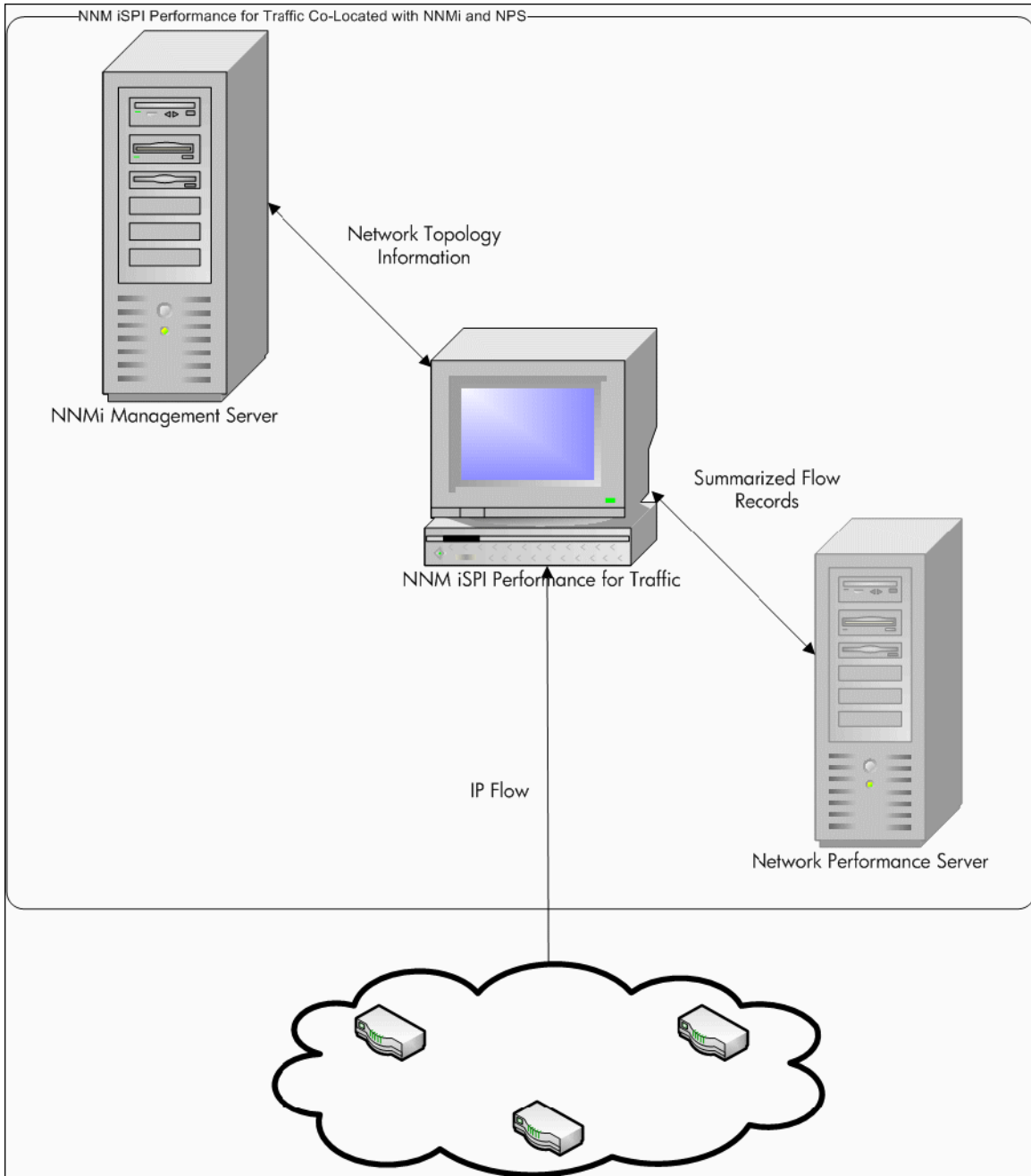
- Aggregates the IP flow records
- Enriches the IP flow records by enabling you to add or update the available fields in the flow records
- Correlates the IP flow records with NNMi for context based analysis.
- Enables you to configure deployment-specific enrichment attributes like site and applications
- Generates performance reports by exporting data to the Network Performance Server (NPS)

You must have NPS installed to generate the traffic reports. Ensure that you install NPS before installing NNM iSPI Performance for Traffic

Provides traffic-related information in the NNMi console

- Generates maps to view the traffic flow information on your network

Figure 1 Integration of NNMi with NNM iSPI Performance for Traffic

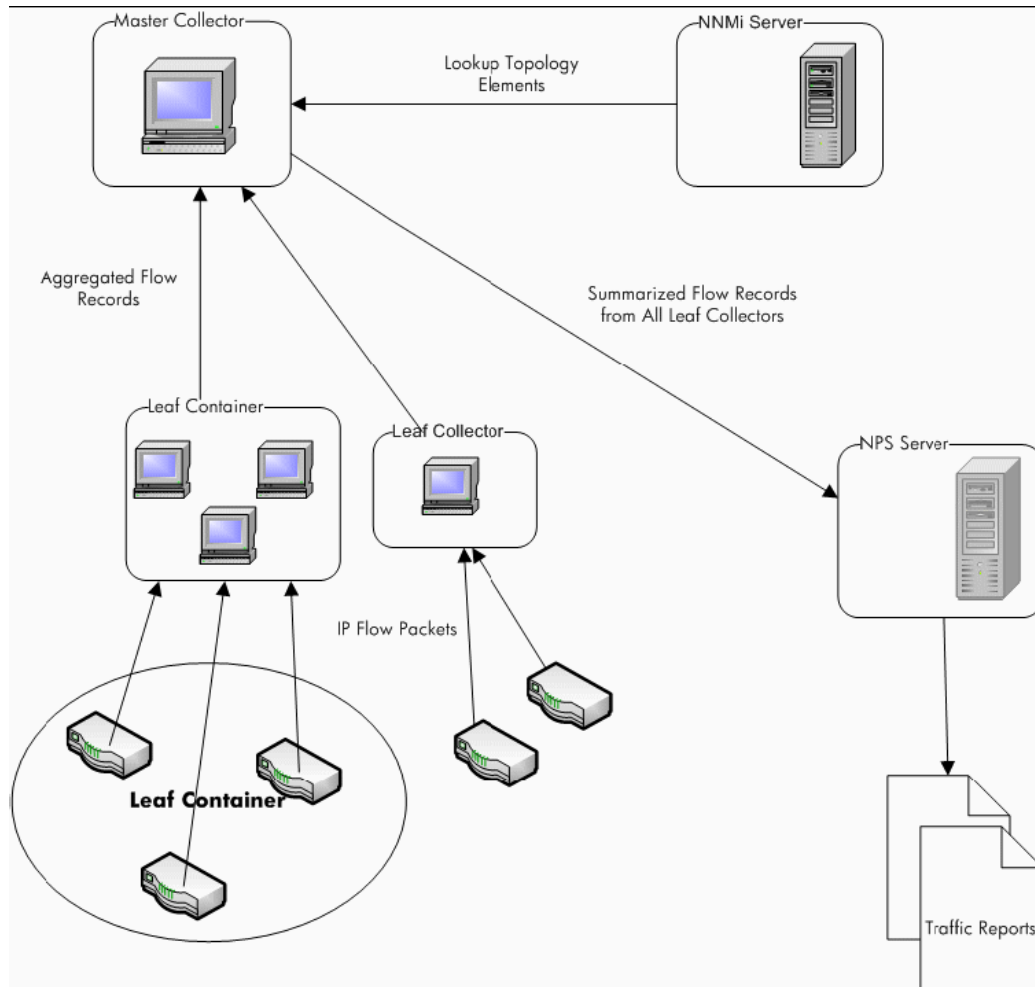


NNM iSPI Performance for Traffic Components

NNM iSPI Performance for Traffic collects and processes traffic data in a two-level architecture.

The following figure explains the product architecture of NNM iSPI Performance for Traffic.

Figure 2 Product architecture of NNM iSPI Performance for Traffic



The following components enable the iSPI to generate summarized traffic flow records from the IP flows received from the routers:

NNM iSPI Performance for Traffic Leaf Collector

The Leaf Collector performs the following tasks:

- Receives the IP flow packets exported by the routers.
- Parses these IP flow packets into flow records.
- Filters the IP flow packets to process based on filter group rules that you defined.
- Performs application mapping based on the application mapping rules that you defined.
- Performs DNS lookup for source and destination IP addresses based on your configuration.
- Performs site mapping analysis (if configured)
- Aggregates the flow records before sending them to the Master Collector.

- Sends the aggregated the flow records to the Master Collector. This operation is called flushing the records from the leaf collectors to the Master Collectors. You can configure the flush period to specify the interval between two flush operations.
- The Leaf Collector also performs top N analysis at 1 minute and 15 minute time intervals to preserve information about the top contributors to traffic and filters out the rest. After the filtering action is performed, the less significant contributors are grouped together and shown with the `Anonymous` label on reports.

A Master Collector can be connected to multiple Leaf Collectors but a Leaf Collector can be connected to only one Master Collector.

NNM iSPI Performance for Traffic Master Collector

The Master Collector is the centralized processing component for a deployment; the Master Collector receives data from all Leaf Collectors. The Master Collector can also connect and receive data from other regional Master Collectors as well as Leaf Collectors configured in the Global Network Management (GNM) setup. The Master Collector performs the following tasks:

- Synchronizes with the NNMi topology information and adds the topology information to the flow records.
- Delivers the summarized flow data and the topology files to NPS for reporting. NPS in turn, aggregates the reports provided by the Master Collector and generates the network traffic performance reports.
- Forwards the flow records to a global Master Collector in a GNM setup.

NNM iSPI Performance for Traffic Extension Pack

The NNM iSPI Performance for Traffic extension pack provides rules and definitions to generate reports from the data generated by the Master Collectors.

By default, each extension pack is installed with different retention periods for the summarized and granular data. The default retention period can be changed by editing the following file on the NPS system:

On Windows:

```
<NPS_Install_Dir>/NNMPerformanceSPI/rconfig/<extension pack>/
customConfig.cfg
```

On Linux:

```
/opt/OV/NNMPerformanceSPI/rconfig/<extension pack>/customConfig.cfg
```

The file provides one entry for the retention period of the archived data and another entry for the retention period of the aggregated data. Changes the configuration in this file takes effect only when you restart the ETL process on the NPS.

For example, The 15-minute extension pack is installed with the following defaults:

- The data aggregated at every hour is stored for 400 days
- The data aggregated at 15 minutes is stored for 30 days

If you change the retention period for the aggregated data to 300 days, the detailed data will be preserved for that length of time. Changing retention periods may have significant impacts on the disk usage.

Additional Sources of Information

- *HP Network Node Manager iSPI Performance for Traffic Software 9.10 Release Notes*
- *HP Network Node Manager iSPI Performance for Traffic Software 9.10 System and Device Support Matrix*
- *HP Network Node Manager i Software 9.10 Installation Guide*
- *HP Network Node Manager i Software 9.10 Deployment Reference*
- *HP Network Node Manager i Software 9.10 Release Notes*
- *HP Network Node Manager i Software 9.10 System and Device Support Matrix*
- *HP Network Node Manager iSPI Performance for Metric Software / Network Performance Server 9.10 Installation Guide*

2 Installation Overview

Depending on the scale of your network, you can install a single Master Collector with a single Leaf Collectors or multiple instances Leaf Collectors with a single instance of the Master Collector. The HP NNMi Extension for iSPI Performance for Traffic must always be installed on the NNMi management server.

Since the NNM iSPI Performance for Traffic uses the data management infrastructure provided by the NPS, you must install the NPS in your environment before installing the NNM iSPI Performance for Traffic. The type of installation of the NPS (single-server installation or dedicated server installation) has no effect on the installation procedure or performance of the NNM iSPI Performance for Traffic.

You can build one of the following monitoring environments after installing the NNM iSPI Performance for Traffic:

- [Single Collector Environment: Installing a Single Instance of Each Collector](#) on page 16
- [Distributed Collector Environment: Installing Multiple Instances of Collectors](#) on page 19

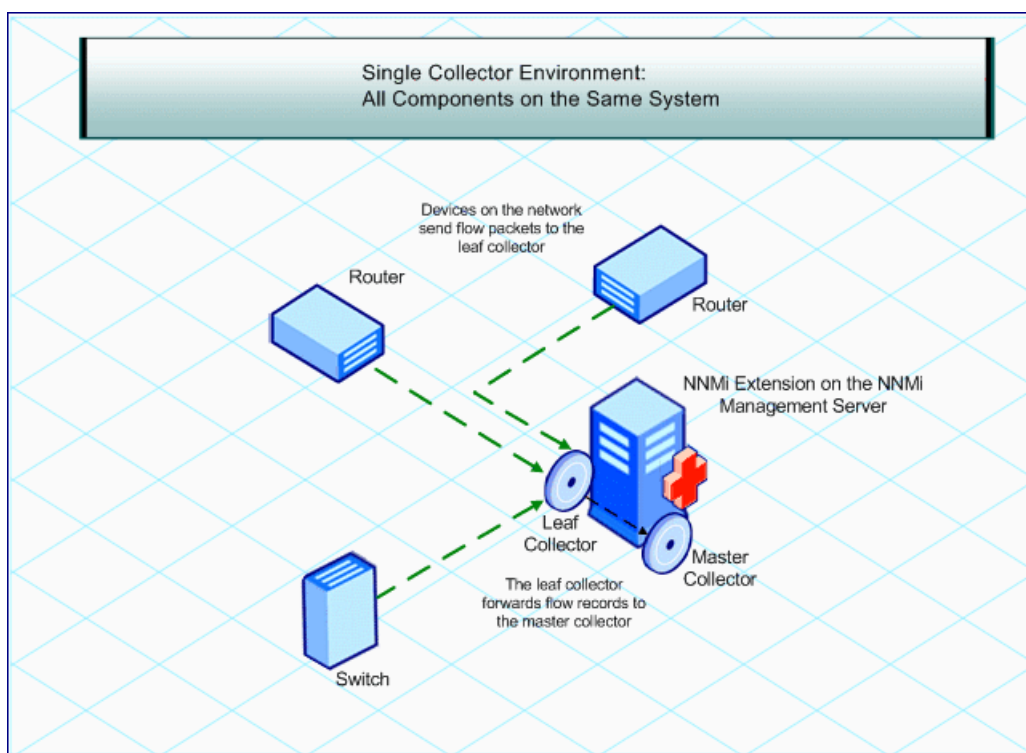
Single Collector Environment: Installing a Single Instance of Each Collector

You can choose this option for small networks. In this configuration, only one Leaf Collector is used for collecting all the flow information, which is processed by the Master Collector.

Install All the Components on the Same System

If your system meets all the requirements to support NNMi, the master and leaf collectors, and the HP NNMi Extension for iSPI Performance for Traffic, you can install all the three components of the NNM iSPI Performance for Traffic on a single system. In this configuration, you can use the Master Collector with only one Leaf Collector. You cannot choose an HP-UX or Solaris management server since the master and leaf collectors are not supported on those platforms.

Figure 3 All Components on the Same System

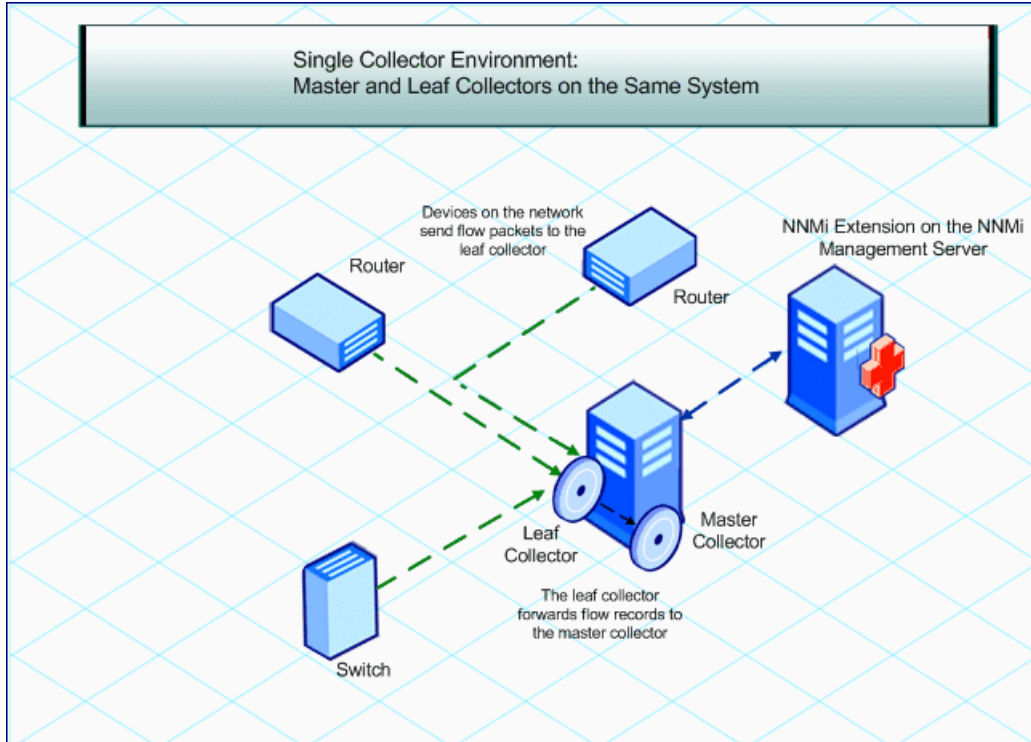


Install Collectors on Different Systems

If you like, you can install one or both the collectors on remote systems. However, you must always install the HP NNMi Extension for iSPI Performance for Traffic on the NNMi management server only. You can use one of the following combinations:

- **Both the collectors on the same remote standalone system:** In this configuration, you can use an NNMi management server running on an operating system different from the operating system running on the system where you install the master and leaf collectors.

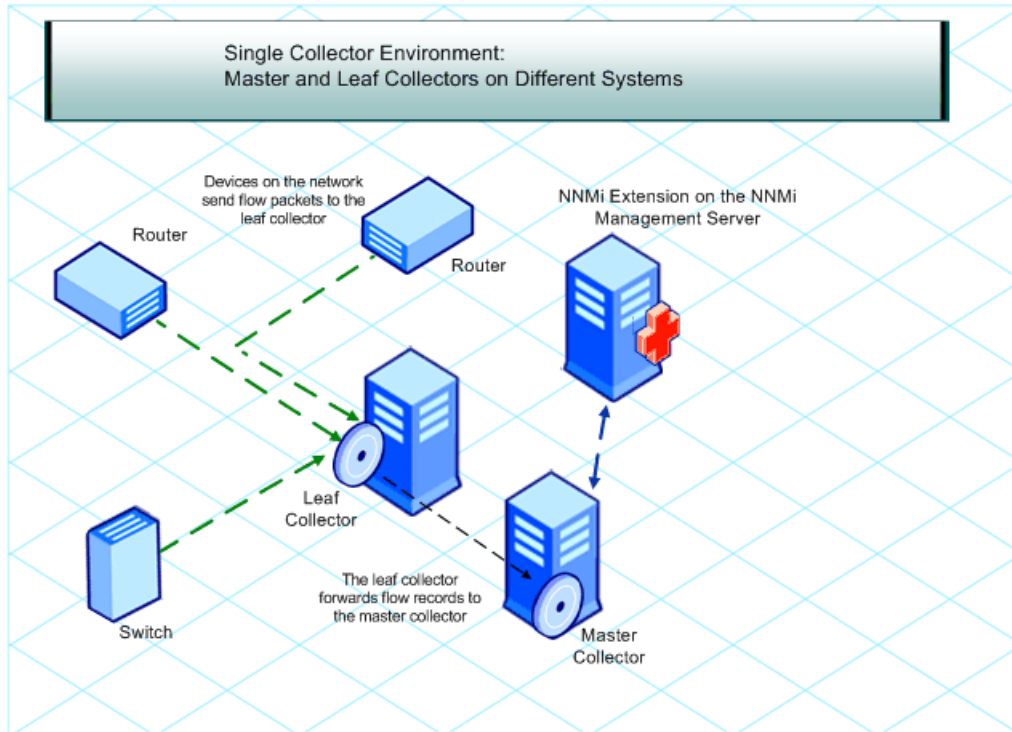
Figure 4 Both the Collectors on a Standalone System



- **Both collectors on different systems:** In this configuration, you can use an NNMi management server running on an operating system different from the operating system running on the system where you install the master and leaf collectors.

You must obtain the Collector Connection Software LTU to enable the communication between the master and leaf collectors. For more information, see [Licensing](#) on page 41.

Figure 5 Master and Leaf Collectors on Different Systems



- **One collector on the NNMi management server and the other collector on a remote system:** In this configuration, the NNMi management server and the collector system must run on the same operating system.

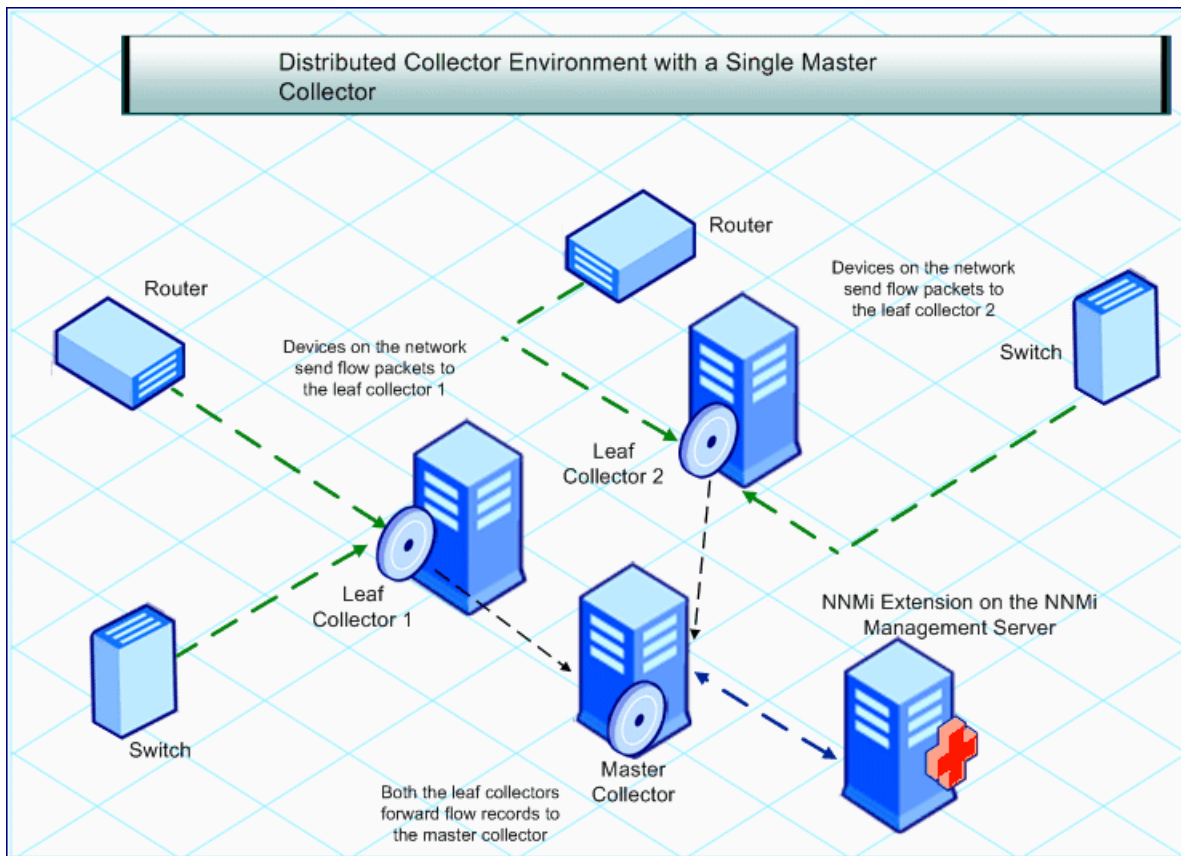
You must obtain the Collector Connection Software LTU to enable the communication between the master and leaf collectors. For more information, see [Licensing](#) on page 41.

Distributed Collector Environment: Installing Multiple Instances of Collectors

On a large network, a high volume of the traffic data can affect the performance of the Master and Leaf Collectors. To avoid performance problems, you can install multiple leaf collectors to share the computational load to retain the desired level of performance of the solution.

You can install multiple Leaf Collectors in the environment with a single instance of the Master Collector. The Master Collector, which you can install on the NNMi management server or on a dedicated remote server, receives flow records from different Leaf Collector instances that exist on the network.

Figure 6 Installation with Multiple Leaf Collectors



Multiple leaf collectors in your monitoring environment share the load with one another and enhance the performance of solution.

You must obtain the Collector Connection Software LTU to enable the communication between the master and leaf collectors. For more information, see [Licensing](#) on page 41.

3 Planning for Installation

Before you begin the installation, ensure that you:

- Complete all preinstallation tasks on the NNMi management server.
- Complete all the tasks listed in the Preinstallation Checklist.

Preinstallation Tasks on the NNMi Management Server

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 Master Collector. See *Network Node Manager i Software Help for Administrators* for more information on creating a new user with the Web Service Client role.

Enable the Read/Write Access to the Data Files on the Management Server

If you are planning to install the Master Collector on a system other than the NNMi management server, make sure that the user that runs the Master Collector has the read/write access to the following directory on the management server:

On the Windows management server

`%NnmDataDir%\shared\perfSpi\datafiles`

On the UNIX/Linux management server

`/var/opt/OV/shared/perfSpi/datafiles` directory.

The share must be visible and writable on the Master Collector system as a network share drive.

Preinstallation Checklist

Table 1 Preinstallation Checklist

Task	Reference Document/Topic	Complete (y/n)
Identify the deployment type: Master Collector on NNMi, both Master and Leaf collectors on NNMi, Master and Leaf Collectors on standalone systems, multiple Leaf Collectors, and so on.	<i>NNM iSPI Performance for Traffic Systems and Devices Support Matrix</i>	
Verify that the systems (where you want to install different components of the product) meet the prerequisites.	<i>NNM iSPI Performance for Traffic Systems and Devices Support Matrix</i>	
Verify that the NNMi version is 9.10.		
Verify that the NPS is installed in the environment.	<i>NNM iSPI Performance for Metrics / NPS Installation Guide</i>	

You must always use the following sequence while installing the NNM iSPI Performance for Traffic:

- 1 Install the HP NNMi Extension for iSPI Performance for Traffic ([Installing the HP NNMi Extension for iSPI Performance for Traffic](#) on page 23).
- 2 Install the Master Collector ([Installing the Master Collector](#) on page 29).
- 3 Install the Leaf Collector ([Installing the Leaf Collector](#) on page 35).

4 Installing the HP NNMi Extension for iSPI Performance for Traffic

The HP NNMi Extension for iSPI Performance for Traffic adds the **NNM iSPI Performance for Traffic Configuration** form into the NNMi workspace and provides launch points for traffic maps.

- ▶ You must always install the HP NNMi Extension for iSPI Performance for Traffic on the NNMi management server. In the NNMi Application failover environment, make sure you install the HP NNMi Extension for iSPI Performance for Traffic on the primary and secondary NNMi systems. Ensure that the NNM iSPI Performance for Traffic licenses are installed on both the system

Installing on the Windows Management Server

To install the HP NNMi Extension for iSPI Performance for Traffic on the Windows management server, follow these steps:

- 1 Log on to the management server with the administrative (for Windows) or root (for UNIX/Linux) privileges.
- 2 Insert the NNM iSPI Performance for Traffic installation media into the DVD drive.
- 3 Go to the `Traffic_NNM_Extension\WinNT` folder on the DVD, and then double-click the `setup.bat` file.

The installation initialization process prompts you to choose the language you want to use. Then the installer checks to make sure you are ready to proceed with the installation.

- 4 On the Introduction page, review the overview information, and then click **Next**. The License Agreement page opens.
- 5 Click **I accept..**, and then click **Next**. The Select Features page opens.
- 6 Click **Next**. The Install Checks page shows the progress of the installation requirement check. When the installer completes the check successfully, click **Next**. The Pre-Install Summary page opens.
- 7 Click **Install**. The installation process begins. During installation, the NNMi Extension for iSPI Performance for Traffic dialog box opens. In this dialog box, specify the following details:
 - NNMi User Password: Type the password of the NNMi **system** account
 - ▶ The system account is a special administrator account that NNMi creates during installation (see the *Installing NNMi* section in the *HP Network Node Manager i Software Installation Guide*).
 - Retype Password: Type the above password again

- Traffic Master FQDN: Fully qualified domain name of the Master Collector system.
- ▶ If you plan to install the Master Collector in a high availability (HA) cluster environment, you must specify the virtual IP address or virtual FQDN of the cluster.

The following details are automatically detected by the installer:

- NNMi User Name: The NNMi system user.
 - NNMi FQDN
 - NNMi JNDI Port
 - Traffic Master http Port
- 8 When the installer completes installing extension packs, a pop-up window appears displaying the status of the extension pack installation. Click **OK**.
 - 9 Click **Done**.
- ▶ You must restart the NNMi processes after installing the NNMi Extension for the NNM iSPI Performance for Traffic. Ensure that no traffic processes are running while performing this operation.

Restart NNMi's processes by running the following commands:

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

Installation Log File

The installation log file (`postInstall_traffic-nnm`) is available in the `%temp%` directory.

Installing on the UNIX/Linux Management Server

To install the HP NNMi Extension for iSPI Performance for Traffic on the UNIX/Linux management server, follow these steps:

- 1 Log on to the UNIX/Linux management server with root privileges.
- 2 Insert the NNM iSPI Performance for Traffic installation media into the DVD drive.
- 3 Make sure that the DVD drive is mounted, and then use the `cd` command to change to the `/cdrom` directory.
- 4 Do one of the following:
 - If you are installing on a Linux management server, go to the `Traffic_NNM_Extension/Linux` directory on the DVD, and then run the `setup` file.
 - If you are installing on a HP-UX management server, go to the `Traffic_NNM_Extension/HPUX` folder on the DVD and then run the `setup` file.
 - If you are installing on a Solaris management server, go to the `Traffic_NNM_Extension/SunOS` folder on the DVD and then run the `setup` file.

The installation initialization process prompts you to choose the language you want to use. Then the installer checks to make sure you are ready to proceed with the installation.

- 5 On the Introduction page, review the overview information, and then click **Next**. The License Agreement page opens.
- 6 Click **I accept..**, and then click **Next**. The Select Features page opens.
- 7 Click **Next**. The Install Checks page shows the progress of the installation requirement check. When the installer completes the check successfully, click **Next**. The Pre-Install Summary page opens.
- 8 Click **Install**. The installation process begins. During installation, the NNMi Extension for iSPI Performance for Traffic dialog box opens. In this dialog box, specify the following details:
 - NNMi User Password: Type the password of the NNMi system user
 - Retype Password: Type the above password again
 - Traffic Master FQDN: Fully qualified domain name of the Master Collector system.

▶ If you plan to install the Master Collector in a high availability (HA) cluster environment, you must specify the virtual IP address or virtual FQDN of the cluster.

The following details are automatically detected by the installer:

- NNMi User Name: The NNMi system user.
 - NNMi FQDN
 - NNMi JNDI Port
 - Traffic Master http Port
- 9 When the installer completes installing extension packs, a pop-up window appears displaying the status of the extension pack installation. Click **OK**.
 - 10 Click **Done**.
 - ▶ You must restart the NNMi processes after installing the NNMi Extension for the NNMi iSPI Performance for Traffic.

Restart NNMi processes by running the following commands:

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

The installation log file (`postInstall_traffic-nnm`) is available in the `/tmp` directory on Linux and Solaris.

Installation Log File on HP-UX

On the NNMi management server on HP-UX, the installer does not create the `postInstall_traffic-nnm` file. Instead, you can see the `swinstall.log` file for more details on the installation process, which is available in the following location:

`/var/adm/sw`

Removing the HP NNMi Extension for iSPI Performance for Traffic

From the Windows Management Server

To remove the HP NNMi Extension for iSPI Performance for Traffic, follow these steps:

- 1 On the NNMi management server, go to the %NnmInstallDir%\Uninstall\HPOvTENM directory.
- 2 Double-click the Setup file. The uninstallation initialization process prompts you to choose the language you want to use. Then the setup program checks to make sure you are ready to proceed with the uninstallation
- 3 The Application Maintenance page opens. Select **Uninstall**.
- 4 Click **Next**. The Pre-Uninstall Summary page opens.
- 5 Click **Uninstall**. The Maintenance Selection window opens.
- 6 Click **Done**.

Alternatively, you can use the Add or Remove Programs (Uninstall a program) feature of the Windows system to remove the NNMi iSPI Performance for Traffic. Choose the **HP NNMi Extension for iSPI Performance for Traffic** entry while using the Programs and Features window.

Uninstallation Log File

The setup program creates the following log files in the %temp% folder:

- preRemove_traffic-nnm
- postRemove_traffic-nnm

From the UNIX/Linux Management Server

To remove the HP NNMi Extension for iSPI Performance for Traffic, follow these steps:

- 1 On the NNMi management server, go to the /opt/OV/Uninstall/HPOvTENM directory.
- 2 Run the following command:

```
./setup
```

The uninstallation initialization process prompts you to choose the language you want to use. Then the setup program checks to make sure you are ready to proceed with the uninstallation

- 3 The Application Maintenance page opens. Select **Uninstall**.
- 4 Click **Next**. The Pre-Uninstall Summary page opens.
- 5 Click **Uninstall**. The Maintenance Selection window opens.
- 6 Click **Done**.

Uninstallation Log File

The setup program creates the following log files in the /tmp directory on Linux and Solaris:

- preRemove_traffic-nnm
- postRemove_traffic-nnm

Uninstallation Log File on HP-UX

On the NNMi management server on HP-UX, the setup program does not create the `preRemove_traffic-nnm` and `podtRemove_traffic-nnm` files. Instead, you can see the `swinstall.log` file for more details on the uninstallation process, which is available in the following location:

```
/var/adm/sw
```


5 Installing the Master Collector

The Master Collector can be installed in either on the NNMi management server or on a standalone, remote server.



You can install only one Master Collector in your environment. In a Global Network Management (GNM) environment, you must install one Master Collector for every region.

Preinstallation Tasks

Create a New Oracle Instance

Skip this task if you choose to use the embedded database with NNMi.

If you configured NNMi to use an Oracle database, the NNM iSPI Performance for Traffic also must be configured to use Oracle as its database, but you must use a *different* Oracle instance for the Master Collector. Create a *new* Oracle database instance for use with the Master Collector.

Note Down the Details of the Oracle Server

Skip this task if you choose to use the embedded database with NNMi.

Note down the following details of the Oracle database that you want to use with the NNM iSPI Performance for Traffic Master Collector.

- Port: The port used by the Oracle database.
- Hostname: Note down the fully-qualified domain name of the database server.
- Database name: Name of the Oracle database instance for the Master Collector.
- User name: The Oracle user name created to access the above instance.
- Password: Password of the above user.

Note Down the Details of the NNMi Management Server

Skip this task if you choose to install the Master Collector on the NNMi management server and NNMi is not installed in an HA or Application Failover environment.

- 1 Go to the following location:

Windows

%nnmdatadir%\conf\nnm\props

HP-UX, Linux, or Solaris

```
/var/opt/OV/conf/nnm/props
```

- 2 Open the `nms-local.properties` file with a text editor.
- 3 Note down the following properties:
 - `com.hp.ov.nms.fqdn`: The FQDN of the NNMi management server.
 - `jboss-http-port`: The HTTP port used by NNMi.
 - `jboss-https-port`: The HTTPS port used by NNMi.
 - `jboss-jnp-port`: The JNDI port of NNMi. If this property is commented out (with the `#!` characters) in the file, NNMi uses the default JNDI port, which is 1099.

If NNMi is installed and configured in the application failover mode, note down the following properties from the `nms-local.properties` file on the secondary NNMi management server:

- `com.hp.ov.nms.fqdn`: The FQDN of the secondary NNMi management server.
- `jboss-http-port`: The HTTP port used by the secondary NNMi.
- `jboss-https-port`: The HTTPS port used by the secondary NNMi.
- `jboss-jnp-port`: The JNDI port of the secondary NNMi.

Ensure the Availability of Necessary Ports

On the Master Collector system, make sure the following ports are available for use:

- 12099
- 12080
- 12458
- 12087

Installing the Master Collector

To install the Master Collector, follow these steps:



Use this procedure for all types of installation scenarios of the Master Collector: the Master Collector on the NNMi management server, the Master Collector on a standalone system, or the Master Collector on the NPS system.

- 1 Log on to the system where you want to install the collector with the root privileges.
- 2 Insert the NNM iSPI Performance for Traffic installation media into the DVD drive.
- 3 Make sure that the DVD drive is mounted, and then use the `cd` command to change to the `/cdrom` directory.
- 4 Go to the `Traffic_Master` directory on the DVD.
- 5 Run the following command:

```
./setup
```

The installation initialization process prompts you to choose the language you want to use. Then the installer checks to make sure you are ready to proceed with the installation.

- 6 A pop-up window appears notifying that you must restart the system after installation for the configuration changes to take effect. Click **Continue**. The Introduction page opens.
- 7 Review the overview information for the installation, and then click **Next**. The License Agreement page opens.
- 8 Click **I accept..**, and then click **Next**. The Select Features page opens.
- 9 Click **Next**. The Server Configuration page opens.
- 10 On this page, select HP Software Embedded Database if NNMi was installed and configured to use the embedded database. Select Oracle if NNMi was configured to use the Oracle database.
- 11 Click **Next**. If you selected HP Software Embedded Database, go to [step 12](#). If you selected Oracle, the Choose Database Initialization Preferences screen appears on the page. On this page, follow these steps:
 - a Do one of the following:
 - If you want to initialize an Oracle database using previously defined database accounts, select Primary Server Installation, and then click **Next**.
 - If you want to connect to an existing database that is already initialized by another primary installation and use this installation in an application failover or HA configuration, select Secondary Server, and then click **Next**.

The Enter Your Database Server Information screen appears on the page
 - b Specify the following details:
 - Host: The FQDN of the Oracle server
 - Port: The port used by Oracle.
 - Instance: The Oracle instance name (the Oracle instance that you created in [Create a New Oracle Instance](#) on page 29).
 - c Click **Next**. The Enter the Database Account User screen appears on the page.
 - d Type the user name and password to access the Oracle instance, and then click **Next**.
- 12 The Install Checks page shows the progress of the installation requirement check. When the installer completes the check successfully, click **Next**. The Pre-Install Summary page opens.
- 13 Click **Install**. The installation process begins. During installation, the Configuring Master dialog box opens. In this dialog box, specify the following details:
 - **Primary NNMi server details**
 - NNMi FQDN: FQDN of the NNMi management server
 - NNMi HTTP Port: The HTTP port used by NNMi.
 - NNMi HTTPS Port: The HTTPS port used by NNMi
 - NNMi JNDI Port: The JNDI port used by NNMi
 - Web Service Client User Name: The user created in [Create a New User with the Web Service Client Role](#) on page 21
 - Web Service Client Password: The password of the above user
 - Retype Password: The above password

- Perf SPI Data Path: The shared directory on the NNMi management server that was created by the `nnmenableperfspi.ovpl` script. The data in this field is automatically added by the installer when the Master Collector is installed on the NNMi management server.
- IsSecure: Select this option if you want the NNM iSPI Performance for Traffic to communicate with NNMi securely (using the HTTPS protocol).



To enable NNM iSPI Performance for Traffic to use HTTPS protocol, use NNMi's out-of-the-box https configuration that uses a self-signed certificate created during installation. See the *HP Network Node Manager i Software Deployment Reference* for more information about using a signed certificate from a Certificate Authority instead of the self-signed certificate.

- NNMi Failover Configured: Select this option if you configured NNMi to work in the application failover mode.

- **Secondary NNMi server details**



This section is enabled only if you select the NNMi Failover Configured option. Do not type anything in this section if NNMi is not configured to work in the application failover mode.

- NNMi FQDN: FQDN of the secondary NNMi management server
- NNMi HTTP Port: The HTTP port used by NNMi
- NNMi HTTPS Port: The HTTPS port used by secondary NNMi
- NNMi JNDI Port: The JNDI port used by secondary NNMi
- Web Service Client User Name: The user created in [Create a New User with the Web Service Client Role](#) on page 21
- Web Service Client Password: The password of the above user
- Retype Password: The above password
- Perf SPI Data Path: The shared directory on the secondary NNMi management server that was created by the `nnmenableperfspi.ovpl` script. The data in this field is automatically added by the installer when the Master Collector is installed on the NNMi management server.
- IsSecure: Select this option if you want the NNM iSPI Performance for Traffic to communicate with NNMi securely (using the HTTPS protocol).



To enable NNM iSPI Performance for Traffic to use HTTPS protocol, use NNMi's out-of-the-box https configuration that uses a self-signed certificate created during installation. See the *HP Network Node Manager i Software Deployment Reference* for more information about using a signed certificate from a Certificate Authority instead of the self-signed certificate.

- **NNM iSPI Performance for Traffic details**

In this section, you must provide the password for the **system** user for the Master Collector that the installer is going to create.

This user is *not* the NNMi system user that you used while installing the HP NNMi Extension for iSPI Performance for Traffic ([Installing the HP NNMi Extension for iSPI Performance for Traffic](#) on page 23). After you specify the password for this user, the Master Collector installer creates this user. This is not an operating system user profile; this user is provisioned inside the Master Collector application.

- ▶ Note down this password. You need this password to log on to the NNM iSPI Performance for Traffic Configuration form ([step 4](#) on page 65).

For convenience, you can provide the same password here that was specified for the NNMi `system` account.

- Traffic Password: Type the password for the system user for the Master Collector.
- Retype Password: Type the above password again.
- IsSecure: Select this option if you want the NNM iSPI Performance for Traffic to communicate with NNMi securely (using the HTTPS protocol).

- ▶ This section displays the ports for the Master Collector:

HTTP Port: 12080

HTTPS Port: 12043

JNDI Port: 12099

You cannot modify these ports.

- 14 Click **Submit**. The installation process continues and the Performance SPI Server Configuration dialog box opens.
- 15 In the Performance SPI Server Configuration dialog box, type the fully-qualified domain name of the NPS, and then click **OK**.

- ▶ Do not specify any other parameters

- 16 When the installer completes installing the Master Collector, click **Done**.

Installation Log File

The installation log file (`postInstall_traffic-master`) is available in the following directory:

```
/tmp
```

Removing the Master Collector

To remove the Master Collector, follow these steps:

- 1 On the Master Collector system, go to the following location:

```
/opt/OV/nonOV/traffic-master/Uninstall/HPOvTRMiSPI
```
- 2 Run the following command:

```
./setup
```
- 3 Follow the on-screen instructions.

Alternatively, you can use the Add or Remove Programs (Uninstall a program) feature of the Windows system to remove the NNM iSPI Performance for Traffic. Choose the **Master Collector for iSPI Performance for Traffic** entry while using the Programs and Features window.

Removing the Traffic Report Extension Pack from the NPS

You must manually uninstall the NNM iSPI Performance for Traffic report extension pack when you uninstall the Master Collector.

To manually uninstall the NNM iSPI Performance for Traffic report extension pack:

- 1 Log on to the system where the NPS is running.
- 2 Go to the following directory:
 - On Windows:
`<NPS_Install_Dir>/NNMPerformanceSPI/bin`
In this instance, `<NPS_Install_Dir>` is the installation directory of the NPS
 - On Linux:
`/opt/OV/NNMPerformanceSPI/bin`
- 3 Ensure that all the processes are running by using the command `statusALL.ovpl`.
- 4 Uninstall the NNM iSPI Performance for Traffic report extension packs by running the following commands:
 - `uninstallExtensionPack.ovpl -p Interface_Traffic`
 - `uninstallExtensionPack.ovpl -p Interface_Traffic_1_min`
 - `uninstallExtensionPack.ovpl -p Interface_Traffic_15_min`

6 Installing the Leaf Collector

If you want to install multiple Leaf Collectors, you must install all instances of the Leaf Collector on systems where the Master Collector is not installed. The Master Collector and a Leaf Collector instance cannot coexist on the same system when multiple Leaf Collectors are installed on the network.

Preinstallation Tasks

Create New Oracle Instances

Skip this task if you choose to use the embedded database with NNMi.

If you configured NNMi to use an Oracle database, the NNM iSPI Performance for Traffic also must be configured to use Oracle as its database, but you must use a *different* Oracle instance for *every* instance of the Leaf Collector. Create new Oracle instances for use with Leaf Collectors. For example, if you want to install five instance of the Leaf Collector, create five different Oracle instances.

Note Down the Details of the Oracle Server

Skip this task if you choose to use the embedded database with NNMi.

Note down the following details of the Oracle database instance that you want to use with the NNM iSPI Performance for Traffic Leaf Collector.

- Port: The port used by the Oracle database.
- Hostname: Note down the fully-qualified domain name of the database server.
- Database name: Name of the Oracle database instance created for the Leaf Collector.
- User name: The Oracle user name created to access the above instance.
- Password: Password of the above user.

Ensure the Availability of Necessary Ports

On the Leaf Collector systems, make sure the following ports are available for use:

- 11099
- 11080
- 11458
- 11087

In addition, the ports on which the Leaf Collectors are listening to flow packets must be available.

Installing the Leaf Collector

- ▶ Use this procedure for all types of installation scenarios of the Leaf Collector: the Leaf Collector on the NNMi management server, the Leaf Collector on a standalone system, or the Leaf Collector on the NPS system.

To install the Leaf Collector, follow these steps:

- 1 Log on to the system where you install the collector with the root privileges.
- 2 Insert the NNM iSPI Performance for Traffic installation media into the DVD drive.
- 3 Make sure that the DVD drive is mounted, and then use the `cd` command to change to the `/cdrom` directory.
- 4 Go to the `Traffic_Leaf` directory on the DVD.
- 5 Run the following command:

```
./setup
```

The installation initialization process prompts you to choose the language you want to use. Then the installer checks to make sure you are ready to proceed with the installation.

- 6 A pop-up window appears notifying that you must restart the system after installation for the configuration changes to take effect. Click **Continue**. The Introduction page opens.
- 7 Review the overview information for the installation, and then click **Next**. The License Agreement page opens.
- 8 Click **I accept..**, and then click **Next**. The Select Features page opens.
- 9 Click **Next**. The Server Configuration page opens.
- 10 On this page, select HP Software Embedded Database if NNMi was installed and configured to use the embedded database. Select Oracle if NNMi was configured to use the Oracle database.
- 11 Click **Next**. If you selected HP Software Embedded Database, go to [step 12](#). If you selected Oracle, the Choose Database Initialization Preferences screen appears on the page. On this page, follow these steps:

- a Do one of the following:

- If you want to initialize an Oracle database using previously defined database accounts, select Primary Server Installation, and then click **Next**.
- If you want to connect to an existing database that is already initialized by another primary installation and use this installation in an application failover or HA configuration, select Secondary Server, and then click **Next**.

The Enter Your Database Server Information screen appears on the page

- b Specify the following details:
 - Host: The FQDN of the Oracle server
 - Port: The port used by Oracle.

- Instance: The Oracle instance name (the Oracle instance that you created in [Create New Oracle Instances](#) on page 35).
 - c Click **Next**. The Enter the Database Account User screen appears on the page.
 - d Type the user name and password to access the Oracle instance, and then click **Next**.
- 12 The Install Checks page shows the progress of the installation requirement check. When the installer completes the check successfully, click **Next**. The Pre-Install Summary page opens.
- ▶ You can select **Force repair...** if the previous installation process was not successful. All the packages are reinstalled again.
- 13 Click **Install**. The installation process begins. During installation, the Configuring Leaf dialog box opens. In this dialog box, you must provide the password for the **system** user for the Leaf Collector that the installer is going to create.
- This user is not the NNMi system user that you used while installing the HP NNMi Extension for iSPI Performance for Traffic ([Installing the HP NNMi Extension for iSPI Performance for Traffic](#) on page 23). After you specify the password for this user, the Leaf Collector installer creates this user. This is not an operating system user profile; this user is provisioned inside the Leaf Collector application.
- ▶ Note down this password. You need this password while configuring the Leaf Collector by using the NNM iSPI Performance for Traffic Configuration form. You can specify a different password for every Leaf Collector.
- 14 Click **Next**, as appropriate during the installation process in the installation wizard screen.
- 15 Click **Submit**. The Install Complete Screen opens.
- 16 Click **Done**.

Installation Log File

The installation log file (postInstall_traffic-leaf) is available in the following directory:

/tmp

Removing the iSPI Performance for Traffic Leaf Collector

To remove the Leaf Collector, follow these steps:

- 1 In the root directory, go to /opt/OV/Uninstall/HPOvTRLiSPI directory.
- 2 Run the following command:

```
./setup
```

The Application Maintenance screen opens. Select Un-install option.
- 3 Click **Next**. The Pre-uninstall summary screen opens.
- 4 Click **Un-install**. The Maintenance Selection window opens.
- 5 Select **Un-install** option.
- 6 The Un-installation screen opens, and the un-installation process initiates.

- 7 After completing the un-installation, click **Done**.

7 Post-Installation Tasks

The NNM iSPI Performance for Traffic interacts frequently with NNMi and the NPS. After installing the NNM iSPI Performance for Traffic, you must ensure that the product is able to interact with both NNMi and the NPS.

Starting the Master Collector

Ensure that NNMi processes are started before starting the Master Collector.

To start the Master Collector, log on to the Master Collector system with the root privileges, and then run the following command:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficmasterstart.ovpl
```

Check the Status of the Master Collector

To check the status of the Master Collector installation, run the following command on the Master Collector system:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficmasterstatus.ovpl
```

If you want to stop the Master Collector, run the following command:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficmasterstop.ovpl
```

Starting the Leaf Collector

To start the Leaf Collector, log on to the Leaf Collector system with the root privileges, and then run the following command:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficleafstart.ovpl
```

Check the Status of the Leaf Collector

To check the status of the Leaf Collector installation, run the following command on the Leaf Collector system:

```
/opt/OV/nonOV/traffic-leaf/bin/nmstrafficleafstatus.ovpl
```

If you want to stop the Leaf Collector, run the following command:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficleafstop.ovpl
```

Checking the Configuration Information

After installing the NNM iSPI Performance for Traffic, run the following command on the Master Collector system to check that the configuration information entered during the installation is correct:

```
/opt/OV/nonOV/traffic-master/bin/nmstrafficinstallcheck.ovpl -username  
system -password <Master_Collector_System_password>
```

In this instance, *<Master_Collector_System_password>* is the password of the system user for the Master Collector (the password that you specified in [NNM iSPI Performance for Traffic details](#) on page 32).

The command checks the validity for the following and displays error messages if it finds incorrect configuration information:

- If the NNMi system address is correctly provided and whether the system is reachable.
- If the password that you provided for the NNMi web-service client is encrypted correctly.
- If the NNM iSPI Performance for Traffic can invoke web-service calls based on the following information that you entered during the installation:
 - FQDN of the NNMi server
 - NNMi server port number
 - NNMi server user name
 - NNMi server password
- If the NPS system address is correctly provided and whether the system is reachable.
- If the NNM iSPI Performance for Traffic can contact the NPS database running on the NPS server
- If the shared drive between the NPS and the Master Collector is configured correctly.

If the utility encounters a problem in any of the above areas, it displays an error message. You can check the error messages in the following log file:

```
/var/opt/OV/log/traffic-master/TrafficDiagnosticLog.log
```


8 Licensing

The NNM iSPI Performance for Traffic product includes a temporary Instant-On license key that is valid for 60 days after you install the iSPI. You must obtain and install a permanent license key as soon as possible.

The NNM iSPI Performance for Traffic may require two different types of licenses:

- **iSPI Points license:** The iSPI Points license is a points-based licensing scheme for all NNM iSPIs (other than the iSPI Performance for Metric). You can obtain iSPI points by purchasing iSPI Point Packs.

For the NNM iSPI Performance for Traffic, you need the following:

- For each sFlow interface: One iSPI point
- For each NetFlow interface: Five iSPI points

For example, if leaf collectors in your environment collect data from five sFlow interfaces and five NetFlow interfaces, you must allocate at least $(1 \times 5) + (5 \times 5) = 30$ iSPI points for your NNM iSPI Performance for Traffic deployment.

When sufficient iSPI points are not available for your deployment, a warning message appears in the NNMi console.

- **Collector Connection Software LTU:** If the Master Collectors and leaf collectors are not located on the same system, you must enable the Collector Connection Software LTU. Your Collector Connection Software LTU must have the capacity to enable monitoring of all the leaf collectors that are configured on servers other than the Master Collector system.

In a Global Network Management environment, you can monitor data from remote leaf collectors that belong to different regions (See the *NNM iSPI Performance for Traffic Deployment Reference* for more information). This configuration also requires you to enable the Collector Connection Software LTU.

When your Collector Connection Software LTU does not have sufficient capacity to enable the monitoring of the master-leaf connections for your deployment, a warning message appears in the NNMi console.

Enabling Licenses for the NNM iSPI Performance for Traffic

Irrespective of your choice of deployment, you must always enable licenses for iSPIs only on the NNMi management server. The `nnmlicense.ovpl` script, available with NNMi, helps you enable licenses by installing license keys on the NNMi management server.

Before You Begin

Before running the licensing script on the NNMi management server, follow these steps:

- 1 Count the number of traffic interfaces in your environment.
- 2 Determine the iSPI points required to monitor your environment.
$$\langle Total_iSPI_points \rangle = \langle Total_NetFlow_Interfaces \rangle \times 5 + \langle Total_sFlow_Interfaces \rangle$$
- 3 Based on the iSPI points calculation, choose and obtain an iSPI Points Pack that can enable the monitoring of traffic interfaces in your environment.
- 4 Identify the following items in your environment:
 - Number of leaf collectors on servers other than the Master Collector system.
 - *In a Global Network Management setup.* Number of leaf collectors that belong to another region.
- 5 Obtain the Collector Connection Software LTU for your environment. While obtaining the LTU, make sure the license has the capacity to enable the monitoring of all master-leaf connections in your environment.

Run the `nnmlicense.ovpl` Command on the Management Server

To enable the NNM iSPI Performance for Traffic licenses from the Autopass console, follow these steps on the NNMi management server:

- 1 Log on to the NNMi management server with the administrative or root privileges.
- 2 Enable the iSPI Points license.

At the command prompt, run the following command:

On Windows

```
%NnmInstallDir%\bin\nnmlicense.ovpl iSPI-Points -gui
```

On UNIX/Linux

```
/opt/OV/bin/nnmlicense.ovpl iSPI-Points -gui
```

The Autopass user interface opens.

Install the license key by following on-screen instructions.

Alternatively, to enable the NNM iSPI Performance for Traffic licenses from the command line, follow these steps:

- a Log on to the NNMi management server with the administrative or root privileges.
- b With the help of a text editor, create a text file that contains only the license key.
- c Save the file on the system.
- d At the command prompt, run the following command:


On Windows

```
%NnmInstallDir%\bin\nnmlicense.ovpl iSPI-Points -f <license_file>
```

On UNIX/Linux

```
/opt/OV/bin/nnmlicense.ovpl iSPI-Points -f <license_file>
```

In this instance, *<license_file>* is the name of the file created in [step b](#).

 Specify the file name with the complete path to the file.

NNMi installs the license key present in *<license_file>*.

- 3 If the Master Collector and leaf collectors are not located on the same system, enable the Collector Connection Software LTU. If you install multiple leaf collectors in the environment (which requires you to install each leaf collectors on a system other than the Master Collector system), you must obtain a license key for each Leaf Collector and follow these steps for each Leaf Collector.

At the command prompt, run the following command:

On Windows

```
%NnmInstallDir%\bin\nnmlicense.ovpl TRAFFICCOLLSPI -gui
```

On UNIX/Linux

```
/opt/OV/bin/nnmlicense.ovpl TRAFFICCOLLSPI -gui
```

The Autopass user interface opens.

Install the license key by following on-screen instructions.

Alternatively, to enable the NNM iSPI Performance for Traffic licenses from the command line, follow these steps:

- a Log on to the NNMi management server with the administrative or root privileges.
- b With the help of a text editor, create a text file that contains only the license key.
- c Save the file on the system.
- d At the command prompt, run the following command:


On Windows

```
%NnmInstallDir%\bin\nnmlicense.ovpl TRAFFICCOLLSPI -f <license_file>
```


On UNIX/Linux

```
/opt/OV/bin/nnmlicense.ovpl TRAFFICCOLLSPI -f <license_file>
```

In this instance, *<license_file>* is the name of the file created in [step b](#).

 Specify the file name with the complete path to the file.

NNMi installs the license key present in *<license_file>*.

 If NNMi is installed in an HA cluster, enable licenses only on the active node.

9 Installing the NNM iSPI Performance for Traffic in a High Availability Cluster Environment

You can install the NNM iSPI Performance for Traffic in a high availability (HA) environment to achieve redundancy in your monitoring setup. Since the NNM iSPI Performance for Traffic consists of multiple components that can be installed on different systems, you can choose the HA implementation of the NNM iSPI Performance for Traffic from multiple deployment scenarios.

Supported HA Products

The HP Network Node Manager iSPI Performance for Traffic Software-provided commands for configuring and running NNM iSPI Performance for Traffic under HA work with the following HA products for the designated operating systems:

- Linux
 - Veritas Cluster Server (VCS) version 5.0
 - Veritas Cluster Server (VCS) version 5.1
- Windows
 - Microsoft Cluster Service for Windows 2008 and 2008 R2

While you can follow the procedures in this chapter to configure NNM iSPI Performance for Traffic to run under other HA products, HP does not provide support for cluster configuration issues for other configurations.

Prerequisites to Configuring the NNM iSPI Performance for Traffic for HA

Any system that you want to include as a node in an NNM iSPI Performance for Traffic HA cluster must meet the following requirements:

- Supports the use of a virtual IP address.
- Supports the use of a shared disk.
- Meets all requirements for NNM iSPI Performance for Traffic as described in the *HP Network Node Manager iSPI Performance for Traffic Software System and Device Support Matrix*.
- Meets all requirements described in the documentation for the HA product on which you plan to run NNM iSPI Performance for Traffic.

- Before you begin to configure the NNM iSPI Performance for Traffic for HA, use the commands for your HA product to configure and test an HA cluster. The HA cluster provides such functionality as checking the application heartbeat and initiating failover. The HA cluster configuration must, at a minimum, include the following items:
 - (Linux only) ssh
 - (Linux only) remsh
- Virtual IP address for the HA cluster that is DNS-resolvable
- Virtual hostname for the HA cluster that is DNS-resolvable

HA Installation Environments

You cannot install the Leaf Collector in an HA cluster.

Option 1: NNMi and the Master Collector in the Same HA

In this scenario, you can choose to install the Master Collector on the NNMi management server as an add-on product.

The NPS may or may not be installed in an HA. However, make sure the NPS is not installed on the NNMi management server. The NPS and Master Collector cannot both exist as HA products in the same HA cluster at the same time.

To install the NNM iSPI Performance for Traffic in this environment, follow these steps:

- 1 Install the HP NNMi Extension for iSPI Performance for Traffic on the NNMi management server. See [Installing the HP NNMi Extension for iSPI Performance for Traffic](#) on page 23.
- 2 Install the Master Collector. See [Installing Add-On Traffic Master Collector After NNMi HA Configuration](#) on page 50.
- 3 Configure the Master Collector. See [Configuring an Installed NNM iSPI Performance for Traffic Master Collector as Add-On NNM iSPI](#) on page 52.

Option 2: Only the Master Collector in HA

In this scenario, NNMi is not installed in an HA cluster. The NPS may or may not be installed in an HA. However, the NPS and Master Collector cannot both exist as HA products in the same HA cluster at the same time.

To install the NNM iSPI Performance for Traffic in this environment, follow these steps:

- 1 Install the HP NNMi Extension for iSPI Performance for Traffic on the NNMi management server. See [Installing the HP NNMi Extension for iSPI Performance for Traffic](#) on page 23.
- 2 Install and configure the Master Collector on the primary node. See [Configuring NNM iSPI Performance for Traffic on the Primary Cluster Node](#) on page 47.
- 3 Install and configure the Master Collector on secondary nodes. See [Configuring NNM iSPI Performance for Traffic on the Secondary Cluster Nodes](#) on page 48.

Configuring NNM iSPI Performance for Traffic on the Primary Cluster Node

Complete the following procedure on the primary cluster node:

- 1 Verify that the system meets all of the requirements specified in [Configuring NNM iSPI Performance for Traffic on the Primary Cluster Node](#) on page 47.
- 2 If you have not already done so, install NNM iSPI Performance for Traffic Master Collector (including the latest consolidated patch, if any), and then verify that NNM iSPI Performance for Traffic is working correctly.
- 3 Back up the NNM iSPI Performance for Traffic Master Collector license file by copying the following file to another location:

```
/var/opt/OV/HPOvLIC/LicFile.txt
```

- 4 Define the disk device group (and logical volume), consisting of at least one shared disk for the NNM iSPI Performance for Traffic HA resource group. For example:

- **vxdiskadm** to add and initialize the disk.
- Use **vxassist** make to allocate disks by space.

```
mkfs -F vxfs /dev/vx/dsk/<disk_group>/<logical_volume_group>
```

- 5 Create the directory mount point for the shared disk (for example, S:\ or /trafficmount):

Linux: Verify that the shared disk directory mount point has been created with root as the user, sys as the group, and the permissions set to 555.

For example:

```
ls -l /trafficmount
```

- 6 Mount the shared disk. For example:

For VCS:

```
#mount -t vxfs /dev/vx/dsk/<disk_group>/<volume_group> /trafficmount
```

- 7 Stop the Master Collector:

```
nmstrafficmasterstop.ovpl
```

If NNM iSPI Performance for Traffic Master Collector is already installed on a node that you will include in this HA resource group, also run **nmstrafficmasterstop.ovpl** on that node at this time

- 8 Unmount the shared disk:

```
umount <HA_mount_point>
```

- 9 Mount the shared disk. For example:

For VCS:

```
#mount -t vxfs /dev/vx/dsk/<disk_group>/<volume_group> /trafficmount
```

- 10 Copy the NNM iSPI Performance for Traffic data disk to the shared disk:

```
/opt/OV/misc/nnm/ha/nnmhadisk.ovpl TRAFFIC -to <HA_mount_point>
```

➤ To prevent database corruption, run this command (with the `-to` option) only one time.

- 11 Verify that NNM iSPI Performance for Traffic Master Collector is not running:

```
nmstrafficmasterstop.ovpl
```

- 12 Configure the NNM iSPI Performance for Traffic HA resource group:

```
/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl TRAFFIC
```

- 13 In the previous step, what value did you specify for the shared file system type?

— For type `disk`, the `nmhaconfigure.ovpl` command configured the shared disk. Continue with the next step.

— For type `none`, configure the shared disk; then continue with the next step.

- 14 Start the NNM iSPI Performance for Traffic HA resource group:

```
/opt/OV/misc/nnm/ha/nnmhastarttrg.ovpl TRAFFIC <resource_group>
```

➤ Now that NNM iSPI Performance for Traffic is running under HA, do not use the `nmstrafficmasterstart.ovpl` and `nmstrafficmasterstart.ovpl` commands for the normal operation. Use these commands only for HA maintenance purposes.

Configuring NNM iSPI Performance for Traffic on the Secondary Cluster Nodes

Complete the following procedure on one secondary cluster node at a time.

- 1 If you have not already done so, complete the procedure for [Configuring NNM iSPI Performance for Traffic on the Primary Cluster Node](#) on page 47.
- 2 Verify that the system meets all of the requirements specified in [Configuring NNM iSPI Performance for Traffic on the Primary Cluster Node](#) on page 47.
- 3 If you have not already done so, install NNM iSPI Performance for Traffic Master Collector (including the latest consolidated patch, if any), and then verify that NNM iSPI Performance for Traffic Master Collector is working correctly.

- 4 Stop NNM iSPI Performance for Traffic:

```
nmstrafficmasterstop.ovpl
```

- 5 Create a mount point for the shared disk (for example, `S:\` or `/trafficmount`).

- 6 Configure the NNM iSPI Performance for Traffic HA resource group:

```
/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl TRAFFIC
```

- 7 Supply the HA resource group name when the command requests this information.

- 8 Verify that the configuration was successful:

```
/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -group <resource_group> -nodes
```

The command output lists all configured nodes for the specified HA resource group.

- 9 Optionally, test the configuration by taking the resource group on the primary node offline and then bringing the resource group on the secondary node online.

Unconfiguring NNM iSPI Performance for Traffic from an HA Cluster

The process of removing an NNM iSPI Performance for Traffic node from an HA cluster involves undoing the HA configuration for that instance of NNM iSPI Performance for Traffic Master Collector. You can then run that instance of NNM iSPI Performance for Traffic Master Collector as a standalone system or you can uninstall NNM iSPI Performance for Traffic Master Collector from that node.

If you want to keep NNM iSPI Performance for Traffic configured for high availability, the HA cluster must contain one node that is actively running NNM iSPI Performance for Traffic Master Collector and at least one passive NNM iSPI Performance for Traffic Master Collector node.

If you want to completely remove NNM iSPI Performance for Traffic Master Collector from the HA cluster, unconfigure the HA functionality on all nodes in the cluster.

To completely unconfigure NNM iSPI Performance for Traffic from an HA cluster, follow these steps:

- 1 Determine which node in the HA cluster is active. On any node, run the following command:

```
/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -group <resource_group>  
-activeNode
```

- 2 On each passive node, unconfigure NNMi from the HA cluster:

```
/opt/OV/misc/nnm/ha/nnmhaunconfigure.ovpl TRAFFIC <resource_group>
```

This command removes access to the shared disk but does not unconfigure the disk group or the volume group.

- 3 On each passive node, remove the resource group-specific files:

- 4 On the active node, disable HA resource group monitoring by creating the following maintenance file:

```
/opt/OV/hacluster/<resource-group>/maintenance
```

The file can be empty.

- 5 Stop traffic Master Collector using the following command:

```
nmstrafficmasterstop.ovpl --HA
```

To prevent data corruption, make sure no instance of traffic Master Collector is running and accessing the shared disk.

- 6 Run the following command on the active node:

```
nmhadisk.ovpl TRAFFIC -from <mount-point>
```

- 7 Remove all files from shared disk.

- 8 Delete the maintenance file.

```
rm -rf $NnmDataDir/hacluster/<resource-group>/maintenance
```

- 9 On the active node, stop the NNM iSPI Performance for Traffic Master Collector HA resource group:

```
/opt/OV/misc/nnm/ha/nnmhastoprg.ovpl TRAFFIC <resource_group>
```

This command does not remove access to the shared disk. Nor does it unconfigure the disk group or the volume group.

- 10 On the active node, unconfigure NNM iSPI Performance for Traffic from the HA cluster:

```
/opt/OV/misc/nnm/ha/nnmhaunconfigure.ovpl TRAFFIC <resource_group>
```

This command removes access to the shared disk but does not unconfigure the disk group or the volume group.

- 11 On the active node, remove the resource group-specific files:

```
rm -rf /var/opt/OV/hacluster/<resource_group>/*
```

- 12 Unmount the shared disk.

- If you want to reconfigure the NNM iSPI Performance for Traffic HA cluster at some point, you can keep the disk in its current state.
- If you want to use the shared disk for another purpose, copy all data that you want to keep (as described in the next procedure), and then use the HA product commands to unconfigure the disk group and volume group.

- 13 After all the nodes are unconfigured from HA. Modify the following file and change the master host name from virtual IP to actual host name of the node:

```
/var/opt/OV/shared/traffic-master/conf/nnm.extended.properties
```

- 14 For add-on Master Collector change these two parameters:

- `com.hp.ov.nms.spi.traffic-master.spi.hostname=<FQDN of the localhost>`
- `com.hp.ov.nms.spi.traffic-master.Nnm.hostname=<FQDN of the NNM server>`

For standalone Master Collector change the following parameter:

- `com.hp.ov.nms.spi.traffic-master.spi.hostname=<FQDN of the localhost>`

- 15 Start traffic Master Collector using the following command:

```
nmstrafficmasterstart.ovpl
```

Installing Add-On Traffic Master Collector After NNMi HA Configuration

The Master Collector for NNM iSPI Performance for Traffic cannot be installed while NNMi is running under HA.

To install the iSPI, temporarily unconfigure HA, install the iSPI on each node in the HA resource group, and then reconfigure HA as described here.

- 1 Determine which node in the NNMi HA cluster is active. On any node, run the following command:

```
$NnmInstallDir/misc/nnm/ha/nnmhaclusterinfo.ovpl -group  
<resource_group> -state
```

- 2 On each passive node, unconfigure any add-on NNM iSPI Performance for Traffic from the HA cluster using the following command:

```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon  
<iSPI_PM_Name>
```

Where <iSPI_PM_Name> is the base name of the Perl module that NNM iSPI Performance for Traffic installs on the NNMi management server.

- 3 On the active node, unconfigure the add-on NNM iSPI Performance for Traffic from the HA cluster using the following command:

```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon  
<iSPI_PM_Name>
```

- 4 On any node in the HA cluster, verify that the add-on NNM iSPI Performance for Traffic on all nodes have been unconfigured from the HA cluster:

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

The command output lists the add-on iSPI configurations in the format <iSPI_PM_Name>[hostname_list]. For example:

```
TrafficSPIHA[hostname1, hostname2]
```

If any hostname appears in the output, repeat step 2 and step 3 until this command returns no results.

- 5 On each passive node, unconfigure NNMi from the HA cluster:

```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM <resource_group>
```

This command removes access to the shared disk but does not unconfigure the disk group or the volume group.

- 6 On each passive node, remove the resource group-specific files:

```
rm -rf $NnmDataDir/hacluster/<resource_group>/*
```

- 7 On the active node, disable HA resource group monitoring by creating the following maintenance file:

```
$NnmDataDir/hacluster/<resource_group>/maintenance
```

The file can be empty.

- 8 Stop NNMi:

```
ovstop -c
```

- 9 To prevent data corruption, accessing the shared disk.

Copy the NNMi files from the shared disk to the node:

```
$NnmInstallDir/misc/nnm/ha/nnmhadisk.ovpl NNM -from <HA_mount_point>
```

- 10 Start NNMi.

```
ovstart -c
```

- 11 Remove the maintenance file. This maintenance file was added in Step 7.

- 12 On the active node, stop the NNMi HA resource group:

```
$NnmInstallDir/misc/nnm/ha/nnmhastoprg.ovpl NNM <resource_group>
```

This command does not remove access to the shared disk. Nor does it unconfigure the disk group or the volume group.

- 13 On the active node, unconfigure NNMi from the HA cluster:

```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM <resource_group>
```

This command removes access to the shared disk but does not unconfigure the disk group or the volume group.
- 14 Remove all NNMi files and directories from the shared disk:

```
rm -rf $HA_MOUNT_POINT/*
```
- 15 On the active node, remove the resource group-specific files:

```
rm -rf $NnmDataDir/hacluster/<resource_group>/*
```
- 16 Use the appropriate operating system commands to unmount the shared disk. For example:

```
umount /nmmount
```
- 17 On the node that was active before unconfiguring NNMi from HA, start NNMi:

```
ovstart -c
```
- 18 On the node that was active before unconfiguring NNMi from HA, verify that NNMi started correctly:

```
ovstatus -c
```

All NNMi services should show the state RUNNING.
- 19 On the node that was active before unconfiguring NNMi from HA, install traffic-Master Collector add-on iSPI that you expect to run on this NNMi management server.
- 20 On the node that was active before unconfiguring NNMi from HA, configure NNMi to run as primary cluster node.

You do not need to do the following:

 - Define a disk device group and logical volume.
 - Create a mount point for the shared disk.
 - Configure the shared disk.
- 21 On each node that was passive before unconfiguring NNMi from HA, install the NNM iSPI Performance for Traffic Master Collector.
- 22 On each node that was passive before unconfiguring NNMi from HA, configure NNMi to run as secondary cluster nodes.

You do not need to create a mount point for the shared disk.

Configuring an Installed NNM iSPI Performance for Traffic Master Collector as Add-On NNM iSPI

The information in this section applies to NNM iSPI Performance for Traffic Master Collector that meets the following requirements:

- The iSPI runs on the NNMi management server.
- The iSPI uses the same Postgres instance as NNMi (except for the NNM iSPI for Performance, which does not use Postgres).

- The iSPI was installed on the NNMi management server prior to HA configuration.

NNM iSPI Performance for Traffic configuration for HA is order independent. If you plan to run NNM iSPI Performance for Traffic Master Collector on the NNMi management server, then unconfigure NNMi from HA on the cluster nodes.

Procedure

To configure NNM iSPI Performance for Traffic Master Collector as an add-on NNM iSPI to run under the HA resource group, follow these steps:

- 1 Completely configure and start the NNMi HA resource group for all nodes in the NNMi HA cluster as described in *Configuring NNMi for HA or configuring NNMi for HA* in an Oracle Environment. Verify that the cluster is properly configured.
- 2 On the active node in the NNMi HA cluster, verify that the NNMi services are running:


```
ovstatus -c
```

All NNMi services should show the state RUNNING.
- 3 On the active node in the NNMi HA cluster, add the iSPI to the NNMi HA resource group:


```
$NnmInstallDir/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon TRAFFIC
```
- 4 Configure the iSPI for HA on each passive node in the NNMi HA cluster, add the iSPI to the NNMi HA resource group:


```
$NnmInstallDir/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon TRAFFIC
```
- 5 Verify the configuration:


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

The command output lists the add-on iSPI configurations in the format TRAFFIC[hostname1, hostname2].

Un-configuring an Installed NNM iSPI Performance for Traffic Master Collector as Add-On NNM iSPI

- 1 On the primary node, NNMi standalone and traffic-master collector as add-on must be running under HA.
- 2 On the passive nodes unconfigure traffic-master collector add-on SPI from the HA cluster.


```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon TRAFFIC
```
- 3 On the primary cluster node, where NNMi standalone and traffic-master collector as add-on are running under HA. Unconfigure traffic-master collector add-on SPI from the HA cluster.


```
$NnmInstallDir/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon TRAFFIC
```
- 4 Go to the NNM iSPI Performance for Traffic Master Collector `conf` directory and edit the `nnm.extended.properties` file manually.

Change the following two parameters in the `nnm.extended.properties` file to their appropriate values:

