HP Network Node Manager iSPI Performance for Traffic Software

for the Windows® and Linux operating systems

Software Version: 9.20 Patch 1

Deployment Guide

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Acknowledgements

This product includes software developed by the Apache Software Foundation.

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Documentation Updates

The title page of this document contains the following identifying information:

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Contents

1 About This Guide

This guide contains a collection of information and best practices for deploying HP Network Node Manager i Software Smart Plug-in Performance for Traffic (NNM iSPI Performance for Traffic in the rest of the document). This guide is targeted to:

- NNM iSPI Performance for Traffic and Network Performance Server (NPS) system administrator
- Network engineer
- HP support
- Engineer with experience in deploying and managing traffic deployments in large installations

Documentation Conventions

The NNM iSPI Performance for Traffic documentation uses the following conventions:

Table 1 NNM iSPI Performance for Traffic Documentation Conventions

Symbol	Description
%TrafficInstallDir% (For Windows) *$TrafficInstallDir (For Linux)*	The NNM iSPI Performance for Traffic install directory when Master Collector or Leaf Collector is not installed on the same system as NNMi. *For Windows* *<drive>*`\Program Files\HP\HP BTO Software` *For Linux* `/opt/OV`
%TrafficDataDir% (For Windows) *$TrafficDataDir (For Linux)*	The NNM iSPI Performance for Traffic data directory when Master Collector or Leaf Collector is not installed on the same system as NNMi. *For Windows* *<drive>*`\ProgramData\HP\HP BTO Software` *For Linux* `/var/opt/OV/`
%NnmInstallDir% (For Windows) *$NnmInstallDir (For Linux)*	The environment variable for the NNMi application directory. The NNM iSPI Performance for Traffic is installed in this directory when Master Collector or Leaf Collector is installed on the same system as NNMi. This variable is automatically created by the NNMi installer for Windows. *For Windows* *<drive>*`\Program Files\HP\HP BTO Software` *For Linux* `/opt/OV`
%NnmDataDir% (For Windows) *$NnmDataDir (For Linux)*	The environment variable for the NNMi data directory. The NNM iSPI Performance for Traffic is installed in this directory when Master Collector or Leaf Collector is installed on the same system as NNMi. This variable is automatically created by the NNMi installer for Windows. *For Windows* *<drive>*`\ProgramData\HP\HP BTO Software` *For Linux* `/var/opt/OV/`

Setting Environment Variables

NNM iSPI Performance for Traffic administrators can run a script that sets up many environment variables for navigating to commonly accessed locations.

To set up available environment variables on the NNMi server, use a command similar to the following examples:

Windows: `C:\Program Files\HP\HP BTO Software\bin\nnm.envvars.bat`

UNIX/Linux: `/opt/OV/bin/nnm.envvars.sh`

To set up environment variables on the NNM iSPI Performance for Traffic Master Collector, use a command similar to the following examples:

Windows: `C:\Program Files\HP\HP BTO Software\traffic-master\bin\traffic-master.envvars.bat`

UNIX/Linux: `/opt/OV/traffic-master/bin/traffic-master.envvars.sh`

To set up environment variables on the NNM iSPI Performance for Traffic Leaf Collector, use a command similar to the following examples:

Windows: `C:\Program Files\HP\HP BTO Software\traffic-leaf\bin\traffic-leaf.envvars.bat`

UNIX/Linux: `/opt/OV/traffic-leaf/bin/traffic-leaf.envvars.sh`

2 Introduction to the NNM iSPI Performance for Traffic

The NNM iSPI Performance for Traffic enriches the data obtained from the IP flow records that are exported by the routers on the network. You can use the enriched data to understand and analyze network traffic patterns and trends in your environment.

You can use the IP flow data, which is processed and enriched by the NNM iSPI Performance for Traffic, to generate reports with the help of the Network Performance Server (NPS). The NNM iSPI Performance for Traffic enables you to export the data into the CSV format for use with other data analysis tools.

IP Flow Data and NNM iSPI Performance for Traffic

Network routers are capable of exporting IP flow data records. An IP flow record includes details like IP addresses of the source and destination devices/systems, port of the source and destination devices/systems, number of bytes of data transmitted, and so on.

The NNM iSPI Performance for Traffic collects and processes these IP flow records and presents you with an enriched set of details where the flow information is enhanced with the network topology information present in NNMi. In addition, you can filter the collected data with user-defined filters or you can associate the flow with user-defined applications.

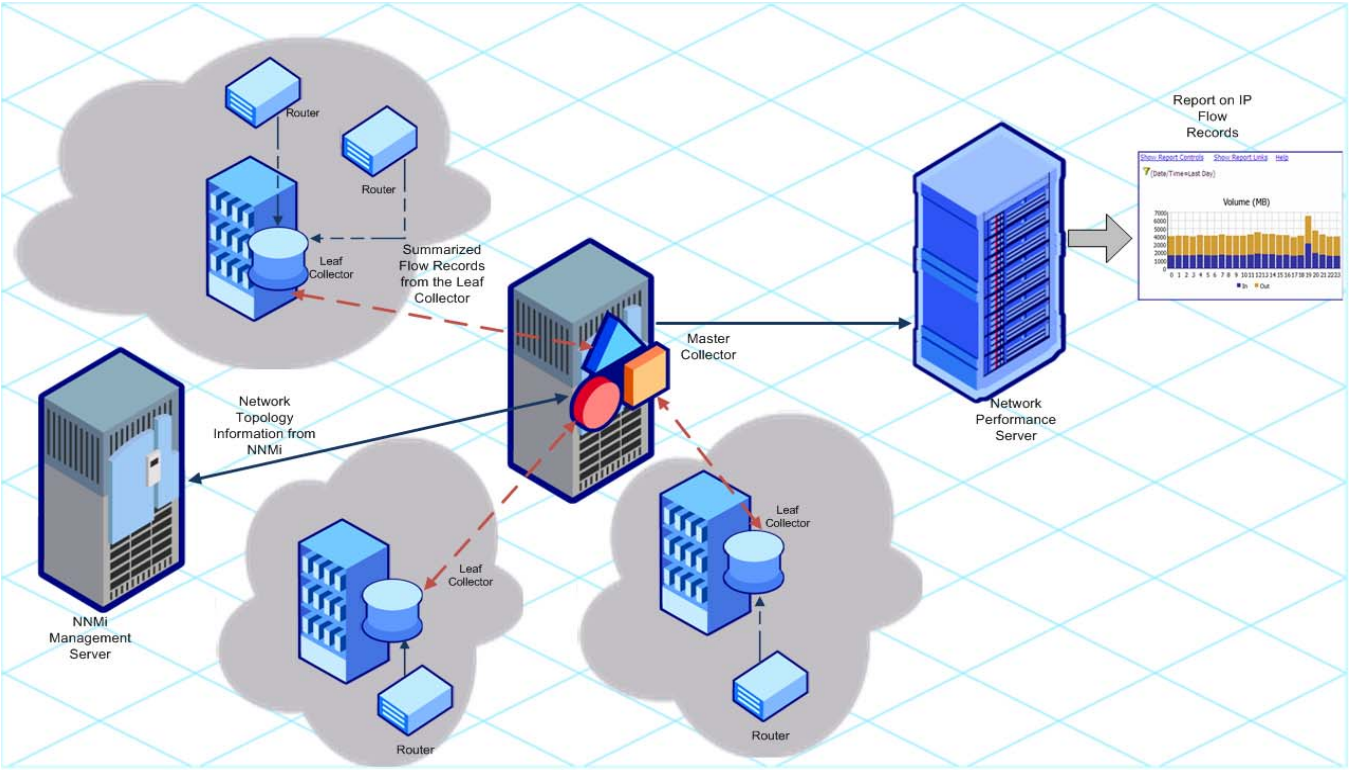
The NNM iSPI Performance for Traffic supports the following types of IP flows:

- NetFlow
  - NetFlow v5
  - NetFlow v9
- JFlow
- SFlow v5
- Internet Protocol Flow Information eXport (IPFIX)

Architecture

The NNM iSPI Performance for Traffic consists of two major components—the **Leaf Collector** and **Master Collector**. Leaf Collectors collect the IP flow records from different routers and forward the summarized data to the Master Collector. Master Collector processes the summarized data received from the Leaf Collectors and adds the topology context to the IP Flow records. The **HP NNMi Extension for iSPI Performance for Traffic**, which is installed on the NNMi management server, rules and definitions to generate reports from the data processed by the Master Collector.

Figure 1 Architecture of the NNM iSPI Performance for Traffic



Workflow of the NNM iSPI Performance for Traffic

1. The Leaf Collector collects the IP flow data from routers that are configured to export IP flow records.
2. The Leaf Collector forwards the collected data to the Master Collector.
3. The HP NNMi Extension for iSPI Performance for Traffic sends the network topology information to the Master Collector.
4. The Master Collector processes the data received from Leaf Collectors and adds the topology context to the collected data.
5. The Master Collector sends the processed data to NPS.
6. With the help of NPS, you can generate reports to analyze the network traffic.

3 Deploying the NNM iSPI Performance for Traffic

The *NNM iSPI Performance for Traffic Support Matrix* defines the following deployment environments for the NNM iSPI Performance for Traffic:

- Entry
- Small
- Medium
- Large

See the *NNM iSPI Performance for Traffic Support Matrix* to know more about the size of these environments. See the *NNM iSPI Performance for Traffic Installation Guide* for the installation information.

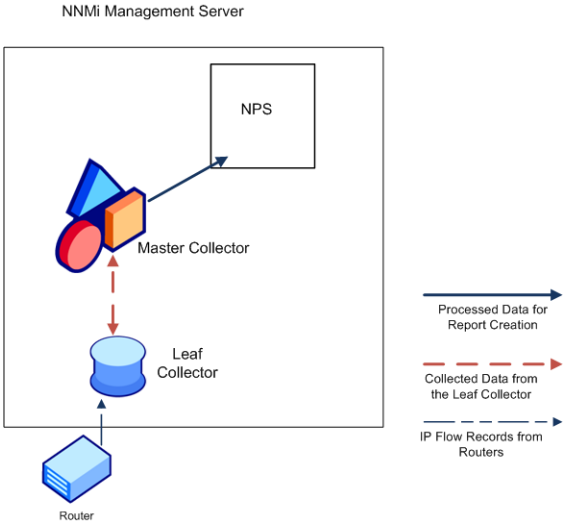
Deploying in an Entry-Level Environment

An entry-level environment is suitable for the evaluation purpose. If you want to create an environment to test and demonstrate different features of the iSPI, choose this type of deployment. Do not create a production setup in this environment.

In this deployment, you can install the Master Collector and Leaf Collector, along with the HP NNMi Extension for iSPI Performance for Traffic, on the NNMi management server. Only one Leaf Collector is used in this deployment.

In this environment, you can install NPS on the NNMi management server.

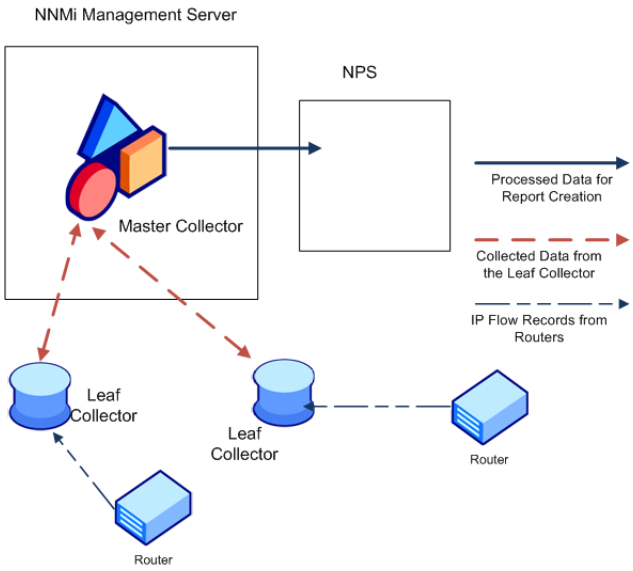
Figure 2 Entry-Level Deployment



Deploying in a Small or Medium-Sized Environment

In this deployment, you must install the Master and Leaf Collectors on different systems. You can choose to install the Master Collector on the NNMi management server and the Leaf Collector on the NPS system. See the *NNM iSPI Performance for Traffic Support Matrix* to determine the number of Leaf Collectors required for your environment.

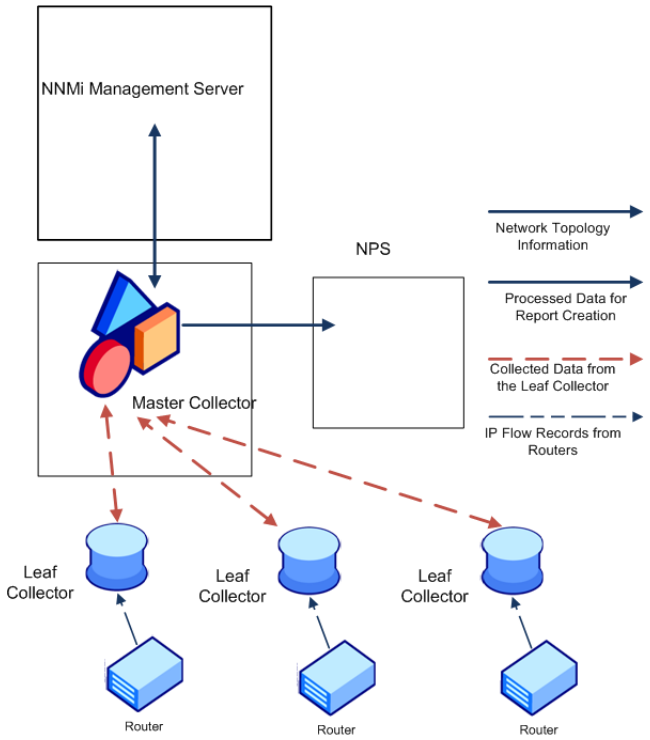
Figure 3 Small or Medium-Sized Deployment



Deploying in a Large Environment

This deployment type is suitable for large-scale production environments. This environment requires multiple instances of the Leaf Collectors. See the *NNM iSPI Performance for Traffic Support Matrix* to determine the number of Leaf Collectors required for your environment.

Figure 4 Large Deployment



4 Preparation

Before installing the NNM iSPI Performance for Traffic, read the information about system hardware and software requirements described in the following table:

Table 2 Software and hardware pre-installation checklist

Document Type	Document Path
HP Network Node Manager i Software Smart Plug-in Performance for Traffic Installation Guide	Windows Media: DVD main drive (root)
	Linux Media: Root directory
	NNM iSPI Performance for Traffic console: `Help > NNM iSPI Documentation Library > iSPI Performance for Traffic Install Guide`
HP Network Node Manager i Software Smart Plug-in Performance for Traffic Release Notes	Windows Media: DVD main drive (root)
	Linux Media: Root directory
	NNM iSPI Performance for Traffic console: `Help > NNM iSPI Documentation Library > iSPI Performance for Traffic Release Notes`
HP Network Node Manager i Software Smart Plug-in Performance for Traffic System and Device Support Matrix	Windows Media: DVD main drive (root)
	UNIX Media: Root directory
	NNM iSPI Performance for Traffic console: `Help > NNM iSPI Documentation Library > iSPI Performance for Traffic System and Device Support Matrix`

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5 Managing Securities

The NNM iSPI Performance for Traffic enables you to configure single sign-on (SSO) to provide access to NNM iSPI Performance for Traffic from the NNMi console while maintaining secure level of access.

Enabling Single Sign-On for the NNM iSPI Performance for Traffic

This section describes the steps required to enable single sign-on (SSO) for the NNM iSPI Performance for Traffic. With SSO, when you log on to the NNMi console, you can access the NNM iSPI Performance for Traffic console without providing the log-on credentials again.

Master Collector and NNMi Installed on the Same System

If you have installed the Master Collector on the NNMi management server, follow these steps:

1. Log on to the Master Collector system as an administrator on Windows and as root on Linux.
2. Navigate to the following directory:

   On Windows

   `%NnmDataDir%\shared\nnm\conf\props`

   On Linux

   `/var/opt/OV/shared/nnm/conf/props`
3. Open the `nms-ui.properties` file with a text editor.
4. Specify the value of the following entry as `true` in the `nms-ui.properties` file:

   `com.hp.nms.ui.sso.isEnabled = true`
5. Run the following command:

   On Windows

   `%NnmInstallDir%\bin\nnmsso.ovpl -reload`

   On Linux

   `/opt/OV/bin/nnmsso.ovpl -reload`
6. Run the following command:

   On Windows

   `%NnmInstallDir%\traffic-master\bin\nmstrafficmasterssoreload.ovpl`

   On Linux

/opt/OV/traffic-master/bin/nmstrafficmasterssoreload.ovpl

Master Collector and NNMi Installed on Separate Systems

If you have installed the Master Collector on a separate system (and not on the NNMi management server), follow these steps:

1. Log on to the NNMi management server as an administrator on Windows and as root on Linux.
2. Navigate to the following directory:

   On Windows

   `%NnmDataDir%\shared\nnm\conf\props`

   On Linux

   `/var/opt/OV/shared/nnm/conf/props`
3. Open the `nms-ui.properties` file with a text editor.
4. Specify the value of the following entry as `true` in the `nms-ui.properties` file:

   com.hp.nms.ui.sso.isEnabled = true
5. Run the following command:

   On Windows

   %NnmInstallDir%\bin\nnmsso.ovpl -reload

   On Linux

   /opt/OV/bin/nnmsso.ovpl -reload
6. *Windows Only:* Follow these steps:
   - Make sure that the `com.hp.nms.ui.sso.initString` property in the `%NnmDataDir%\shared\nnm\conf\props\nms-ui.properties` file and the `initString` property in the `%NnmDataDir%\shared\nnm\conf\lwssofmconf.xml` file are set to the same value.
   - *Windows Only:* Make sure that the `com.hp.nms.ui.sso.protectedDomains` property in the `%NnmDataDir%\shared\nnm\conf\props\nms-ui.properties` file and the `domain` element in the `%NnmDataDir%\shared\nnm\conf\lwssofmconf.xml` file are set to the same value.
7. *Linux Only:* Follow these steps:
   - Make sure that the `com.hp.nms.ui.sso.initString` property in the `/var/opt/OV/shared/nnm/conf/props/nms-ui.properties` file and the `initString` property in the `/var/opt/OV/shared/nnm/conf/lwssofmconf.xml` file are set to the same value.
   - *Linux Only:* Make sure that the `com.hp.nms.ui.sso.protectedDomains` property in the `/var/opt/OV/shared/nnm/conf/props/nms-ui.properties` file and the `domain` element in the `/var/opt/OV/shared/nnm/conf/lwssofmconf.xml` file are set to the same value.
8. Log on to the Master Collector system as an administrator on Windows and as root on Linux.
9. Create the following directory structure on the Master Collector system:

   On Windows

   `%TrafficDataDir%\shared\nnm\conf\props`

On Linux

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

10 *Windows Only:* Follow these steps:

   a Copy the following file from the `%NnmDataDir%\shared\nnm\conf` directory on the NNMi management server to the `%TrafficDataDir%\shared\nnm\conf` directory on the Master Collector system:

   `lwssofmconf.xml`

   b Copy the following file from the `%NnmDataDir%\shared\nnm\conf\props` directory on the NNMi management server to the `%TrafficDataDir%\shared\nnm\conf\props` directory on the Master Collector system:

   `nms-ui.properties`

11 *Linux Only:* Follow these steps:

   a Copy the following file from the `/var/opt/OV/shared/nnm/conf` directory on the NNMi management server to the `/var/opt/OV/shared/nnm/conf` directory on the Master Collector system:

   `lwssofmconf.xml`

   b Copy the following file from the `/var/opt/OV/shared/nnm/conf/props` directory on the NNMi management server to the `/var/opt/OV/shared/nnm/conf/props` directory on the Master Collector system:

   `nms-ui.properties`

12 Navigate to the following directory:

   On Windows

   `%TrafficDataDir%\shared\nnm\conf\props`

   On Linux

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

13 Open the `nms-ui.properties` file with a text editor.

14 Specify the value of the following entry as `true` in the `nms-ui.properties` file on the Master Collector:

   `com.hp.nms.ui.sso.isEnabled = true`

15 Run the following command on the Master Collector system:

   On Windows

   `%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterssoreload.ovpl`

   On Linux

   `/opt/OV/traffic-master/bin/nmstrafficmasterssoreload.ovpl`

16 To verify that SSO is enabled, clear the browser cookies and log on to the NNMi console again with a new browser session and as a non–system user.

6 Deploying the NNM iSPI Performance for Traffic in a High-Availability Cluster

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:

- Veritas Cluster Server (VCS) version 5.0
- Veritas Cluster Server (VCS) version 5.1
- 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

Among the three components of the NNM iSPI Performance for Traffic, you can install only the Master Collector under an HA cluster. In an environment where NNMi is installed in an HA cluster, you may choose to install the Master Collector in the same cluster or in a different cluster.

To install the Master Collector in an HA cluster, you can choose one of the following options:

- NNMi and the Master Collector in the same cluster
- Only the Master Collector in an HA cluster

If NNMi is installed in an HA cluster, you must install the HP NNMi Extension for iSPI Performance for Traffic on all NNMi management servers in the cluster.

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

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

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

Configuring an HA Cluster on a Set of Systems with NNMi and the Master Collector

If you have NNMi and the Master Collector installed on at least two systems, you can create an HA cluster and configure NNMi and the collector to run under HA.

You can configure NNMi and Master Collector on the primary node and secondary node in an HA environment. For more information on how to install NNMi in an HA environment, see *NNMi Deployment Reference*.

To configure the Master Collector on the primary node, follow these steps:

1. Install NNMi and Master Collector on each system. For more information, see the *NNMi Installation Guide* and the *NNM iSPI Performance for Traffic Installation* guide.
2. Configure the HA software on the systems and configure NNMi to run under HA. See the *NNMi Deployment Reference* for information on configuring NNMi to run under HA.
3. Configure the Master Collector on the primary (active) node:

a Run the following command to find the virtual hostname:

nnmofficialfqdn.ovpl

b Modify the `login-config.xml` file from the `%NnmInstallDir%\traffic-master\server\conf` or `/opt/OV/traffic-master/server/conf` directory to reflect the virtual FQDN of the NNMi management server:

- Open the `login-config.xml` file with a text editor.
- Look for the element `<module-option name="nnmAuthUrl">`.
- Modify the string contained within the element to reflect the virtual FQDN of the NNMi management server.
- Save the file.

c Go to the following directory:

On Windows

`%NnmDataDir%\nmsas\traffic-master\conf`

On Linux

`/var/opt/OV/nmsas/traffic-master/conf`

d In the `nnm.extended.properties` file, set the `com.hp.ov.nms.spi.traffic-master.Nnm.perfspidatapath` property to the value that was displayed by the `nnmenableperfspi.ovpl` script.

The `nnmenableperfspi.ovpl` script records all the details in the `nnmenableperfspi_log.txt` file (available in the `%NnmDataDir%\log` or `/var/opt/OV/log` directory) on the NNMi system, which you can use for your reference.

Default values are:

On Windows

%HA_MOUNT_POINT%\NNM\dataDir\shared\perfSpi\datafiles

On Linux

$HA_MOUNT_POINT/NNM/dataDir/shared/perfSpi/datafiles

Mount Point is the directory location for mounting the NNMi shared disk. This mount point must be consistent between systems. (That is, each node must use the same name for the mount point.) For example:

Windows: `S:\`

Make sure that you specify the drive completely. S and S: are unacceptable formats and do not provide access to the shared disk.

Linux: `/nnmmount`

e Run the following command to configure the Master Collector to run under the HA cluster:

For Windows

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

For Linux

/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon TRAFFIC

4 Configure the Master Collector on the secondary (passive) node:

a Install NNMi with Master Collector on the secondary node. Make sure the secondary node has a separate Fully Qualified Domain Names (FQDN) during the installation. See the *NNMi Installation Guide* and the *HP Network Node Manager iSPI Performance for Traffic Software Installation* guide for more information.

a Run the following command to find the virtual hostname:

`nnmofficialfqdn.ovpl`

b Modify the `login-config.xml` file from the `%NnmInstallDir%\traffic-master\server\conf` or `/opt/OV/traffic-master/server/conf` directory to reflect the virtual FQDN of the NNMi management server:

– Open the `login-config.xml` file with a text editor.

– Look for the element `<module-option name="nnmAuthUrl">`.

– Modify the string contained within the element to reflect the virtual FQDN of the NNMi management server.

– Save the file.

c Go to the following directory:

On Windows

`%NnmDataDir%\nmsas\traffic-master\conf`

On Linux

`/var/opt/OV/nmsas/traffic-master/conf`

d In the `nnm.extended.properties` file, set the `com.hp.ov.nms.spi.traffic-master.Nnm.perfspidatapath` property to the value that was displayed by the `nnmenableperfspi.ovpl` script.

The `nnmenableperfspi.ovpl` script records all the details in the `nnmenableperfspi_log.txt` file (available in the `%NnmDataDir%\log` or `/var/opt/OV/log` directory) on the NNMi system, which you can use for your reference.

Default values are:

— On Windows: %HA_MOUNT_POINT%\NNM\dataDir\shared\perfSpi\datafiles

— On Linux: $HA_MOUNT_POINT/NNM/dataDir/shared/perfSpi/datafiles

e Run the following commands to configure the Master Collector on the secondary node to run under the HA cluster:

For Windows

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

For Linux

`/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon TRAFFIC`

5 Repeat step 4 on page 26 on each passive node in the HA cluster.

Installing the Master Collector in an Existing NNMi HA Cluster Environment

You can configure the Master Collector on the primary node and secondary node in an NNMi HA cluster environment. For more information on how to install NNMi in an HA environment, see *NNMi Deployment Reference* guide.

1. Install the HP NNMi Extension for iSPI Performance for Traffic on each server in the HA cluster. While installing the HP NNMi Extension for iSPI Performance for Traffic, specify the virtual FQDN of the NNMi server as the FQDN of the Master Collector system
2. Make sure that NNMi is running on the primary server.
3. Put the NNMi resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

   On Windows

   `%NnmDataDir%\hacluster\`*<resource_group_name>*

   On UNIX/Linux

   `/var/opt/OV/hacluster/`*<resource_group_name>*

4. Install the Master Collector on the primary (active) node in the cluster, but do *not* start the collector.

   a. Modify the `login-config.xml` file from the `%NnmInstallDir%\traffic-master\server\conf` or `/opt/OV/traffic-master/server/conf` directory to reflect the virtual FQDN of the NNMi management server:

      – Open the `login-config.xml` file with a text editor.

      – Look for the element `<module-option name="nnmAuthUrl">`.

      – Modify the string contained within the element to reflect the virtual FQDN of the NNMi management server.

      – Save the file.

   b. Go to the following directory:

      On Windows

      `%NnmDataDir%\nmsas\traffic-master\conf`

      On Linux

      `/var/opt/OV/nmsas/traffic-master/conf`

   c. In the `nnm.extended.properties` file, set the `com.hp.ov.nms.spi.traffic-master.Nnm.perfspidatapath` property to the value that was displayed by the `nnmenableperfspi.ovpl` script.

      The `nnmenableperfspi.ovpl` script records all the details in the `nnmenableperfspi_log.txt` file (available in the `%NnmDataDir%\log` or `/var/opt/OV/log` directory) on the NNMi system, which you can use for your reference.

      Default values are:

      — On Windows: %HA_MOUNT_POINT%\NNM\dataDir\shared\perfSpi\datafiles

      — On Linux: $HA_MOUNT_POINT/NNM/dataDir/shared/perfSpi/datafiles

5. Remove the `maintenance` file that you added in step 3 on page 27.

6 Initiate a failover to a secondary (passive) node in the cluster where you want to install the Master Collector. Make sure that NNMi fails over and runs on the secondary server successfully.

7 On this system, follow these steps:

a Put the NNMi resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

`%NnmDataDir%\hacluster\`*<resource_group_name>*

`/var/opt/OV/hacluster/`*<resource_group_name>*

b Run **`ovstatus -c`** to make sure that `ovjboss` is running.

c Install the Master Collector on this server., but do *not* start the collector.

d Modify the `login-config.xml` file from the `%NnmInstallDir%\traffic-master\server\conf` or `/opt/OV/traffic-master/server/conf` directory to reflect the virtual FQDN of the NNMi management server:

– Open the `login-config.xml` file with a text editor.

– Look for the element `<module-option name="nnmAuthUrl">`.

– Modify the string contained within the element to reflect the virtual FQDN of the NNMi management server.

– Save the file.

e Go to the following directory:

On Windows

`%NnmDataDir%\nmsas\traffic-master\conf`

On Linux

`/var/opt/OV/nmsas/traffic-master/conf`

f In the `nnm.extended.properties` file, set the `com.hp.ov.nms.spi.traffic-master.Nnm.perfspidatapath` property to the value that was displayed by the `nnmenableperfspi.ovpl` script.

The `nnmenableperfspi.ovpl` script records all the details in the `nnmenableperfspi_log.txt` file (available in the `%NnmDataDir%\log` or `/var/opt/OV/log` directory) on the NNMi system, which you can use for your reference.

Default values are:

— On Windows: %HA_MOUNT_POINT%\NNM\dataDir\shared\perfSpi\datafiles

— On Linux: $HA_MOUNT_POINT/NNM/dataDir/shared/perfSpi/datafiles

g Remove the `maintenance` file that you added in step a on page 28.

8 If you have multiple nodes in the cluster, fail over to another passive server, and then repeat step a on page 28 through step g on page 28.

9 Fail over to the server that was active when you started this procedure.

10 Run the following command on the active server first, and then on all passive servers:

For Windows

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

For Linux

```
/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl NNM -addon TRAFFIC
```

11 Verify that the Master Collector is successfully registered by running the following command:

On Windows

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

On Linux

```
/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get
NNM_ADD_ON_PRODUCTS
```

Option 2: the Master Collector in a Standalone HA Cluster

In this scenario, NNMi may exist in an HA cluster, but not in the cluster where the Master Collector is installed. NPS may or may not be installed in an HA. However, 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. Make sure to specify the virtual FQDN of the Master Collector system during installation.

2 On the primary (active) server, follow these steps:

   a Make sure that requirements in Prerequisites to Configuring the NNM iSPI Performance for Traffic for HA on page 23 are met.

   b Note down the disk group and logical volume group name of the cluster.

   c Install NNM iSPI Performance for Traffic Master Collector, and then verify that the Master Collector is working correctly.

   d 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

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

   On Windows, run the following command:

   ```
   %TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhadisk.ovpl
   TRAFFIC -to <HA_mount_point>
   ```

   On Linux, run the following command:

   ```
   /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.

   f Run the following command to configure the NNM iSPI Performance for Traffic HA resource group:

On Windows

%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaconfigure.ovpl TRAFFIC

On Linux

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

Specify the details specific to this cluster (and *not* the cluster where NNMi may exist) while answering the questions asked by the script (see *Table: NNMi HA Primary Node Configuration Information* in the *NNMi Deployment Reference*).

g Run the following command to start the NNM iSPI Performance for Traffic HA resource group.

On Windows

%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhastartrg.ovpl TRAFFIC <resource_group>

On Linux:

/opt/OV/misc/nnm/ha/nnmhastartrg.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.

3 On the secondary (passive) cluster node, follow these steps:

a Install the NNM iSPI Performance for Traffic Master Collector, and then verify that the NNM iSPI Performance for Traffic Master Collector is working correctly.

b Stop the Master Collector:

nmstrafficmasterstop.ovpl

c Run the following command to configure the NNM iSPI Performance for Traffic HA resource group:

On Windows

%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaconfigure.ovpl TRAFFIC

On Linux

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

d Supply the same details that were provided during active node configuration.

e Run the following command to verify that the configuration was successful.

On Windows

%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaclusterinfo.ovpl -group <*resource_group*> **-nodes**

On UNIX/Linux

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

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

f Optionally, test the configuration by failing over to a passive node and failing back to the original node.

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:

   %NNMInstallDir%\traffic-master\misc\nnm\ha\nnmhaclusterinfo.ovpl -group <*resource_group*> **-activeNode** or **%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaclusterinfo.ovpl -group** <*resource_group*> **-activeNode**

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

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

   %NnmInstallDir%\traffic-master\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC <*resource_group*> or **%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC** <*resource_group*>

   /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:

   Delete all files in the following directory:

   `%NnmInstallDir%\traffic-master\hacluster\<resource_group>\` or `%TrafficInstallDir%\traffic-master\hacluster\<resource_group>\`

   `/opt/OV/traffic-master/hacluster/<resource_group>`

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

   %NnmInstallDir%\traffic-master\hacluster\<resource-group>\maintenance

   or **%TrafficInstallDir%\traffic-master\hacluster\<resource-group>\maintenance**

   /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:

nnmhadisk.ovpl TRAFFIC -from <mount-point>

7 Remove all files from shared disk.

8 Delete the maintenance file.

del %NnmDataDir%\hacluster\<resource-group>\maintenance or **del %TrafficDataDir%\hacluster\<resource-group>\maintenance**

rm -rf /opt/OV/hacluster/<resource-group>/maintenance

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

%NnmInstallDir%\traffic-master\misc\nnm\ha\nnmhastoprg.ovpl TRAFFIC <resource_group> or **%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhastoprg.ovpl TRAFFIC <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:

%NnmInstallDir%\traffic-master\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC *<resource_group>* or **%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC** *<resource_group>*

/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:

Delete all files in the following directory:

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\`

`/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:

`%NnmDataDir%\shared\traffic-master\conf\nnm.extended.properties` or `%TrafficDataDir%\shared\traffic-master\conf\nnm.extended.properties`

`/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>

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

15 Start traffic Master Collector using the following command:

`nmstrafficmasterstart.ovpl`

Patching NNM iSPI Performance for Traffic Master Collector in HA

This section describes the steps required to install and uninstall NNM iSPI Performance for Traffic Master Collector Patch when Master Collector is configured in HA. The steps provided in this section are applicable to both options described in HA Installation Environments on page 24.

Prerequisites to Apply Master Collector Patch in HA

Make sure that the following prerequisites are met before you begin the Master Collector Patch installation process:

- You must upgrade NNMi, NNM iSPI Performance for Metrics, NNMi Extension for iSPI Performance for Traffic, and NNM iSPI Performance for Traffic Leaf Collector to latest available patch.
- Make sure that your primary Master Collector node is configured as the active node.
- You must install patch on each passive Master Collector (s) before installing the patch on active Master Collector.

Applying Master Collector Patch in HA

To install Master Collector Patch, follow the steps listed below in the same order:

1 Install Master Collector Patch on Passive Master Collector on page 34

2 Install Master Collector Patch on Active Master Collector on page 35

3 Reconfigure Passive Master Collectors in HA on page 36

Install Master Collector Patch on Passive Master Collector

To install Master Collector Patch on passive Master Collectors in HA, follow these steps:

1. Move the HA cluster in maintenance mode by creating the following files on each passive Master Collector:

   On Windows

   `%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

   `%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

   On Linux

   `/var/opt/OV/hacluster/<resource_group>/maintenance`

   `/var/opt/OV/hacluster/<resource_group>/maint_NNM`

2. Log on to each passive Master Collector as an administrator on Windows and as root on Linux.

3. Run the following command to remove the Master Collector temporarily from HA cluster:

   On Windows

   — NNMi and the Master Collector in the same cluster

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

   ➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command does not show a passive Master Collector in the list:

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

   — Master Collector in a Standalone HA Cluster

   `%TrafficInstallDir%\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC <resource_group>`

   ➤ When Master Collector is installed in a standalone HA Cluster, make sure that the following command does not show a passive Master Collector in the list:

   `%TrafficInstallDir%\misc\nnm\ha\nnmhaclusterinfo.ovpl -group <resource_group> -nodes`

   On Linux

   — NNMi and the Master Collector in the same cluster

   `/opt/OV/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon TRAFFIC`

   ➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command does not show passive Master Collector in the list:

   `/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get NNM_ADD_ON_PRODUCTS`

— Master Collector in a Standalone HA Cluster

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

When Master Collector is installed in a standalone HA Cluster, make sure that the following command does not show a passive Master Collector in the list:

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

4 Apply the Master Collector Patch as described in the patch text.

Do NOT reconfigure HA again on this passive Master Collector until the patch is installed on active Master Collector.

Install Master Collector Patch on Active Master Collector

To install Master Collector Patch on active Master Collector in HA, follow these steps:

1 Move the HA cluster in maintenance mode by creating the following files on active Master Collector:

On Windows

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or
`%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or
`%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

`/var/opt/OV/hacluster/<resource_group>/maintenance`

`/var/opt/OV/hacluster/<resource_group>/maint_NNM`

2 Run the following command to stop the Master Collector process on active Master Collector:

On Windows

%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstop.ovpl --HA or
%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstop.ovpl --HA

On Linux

/opt/OV/traffic-master/bin/nmstrafficmasterstop.ovpl --HA

3 Install the Master Collector Patch as described in the patch text.

Do NOT unconfigure HA on the active Master Collector.

4 Run the following command to start the Master Collector process on active Master Collector:

On Windows

%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl --HA or
%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl --HA

On Linux

/opt/OV/traffic-master/bin/nmstrafficmasterstart.ovpl --HA

Reconfigure Passive Master Collectors in HA

To reconfigure passive Master Collector in HA, follow these steps:

1. On each passive Master Collector, run the following command to reconfigure HA.

   On Windows

   — NNMi and the Master Collector in the same cluster

   %NnmInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl NNM –addon TRAFFIC

   ➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command shows a passive Master Collector in the list:

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

   — Master Collector in a Standalone HA Cluster

   %TrafficInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl TRAFFIC

   ➤ When Master Collector is installed in a standalone HA Cluster, make sure that the following command shows a passive Master Collector in the list:

   %TrafficInstallDir%\misc\nnm\ha\nnmhaclusterinfo.ovpl –group <resource_group> -nodes

   For Linux

   — NNMi and the Master Collector in the same cluster

   /opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl NNM –addon TRAFFIC

   ➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command shows passive Master Collector in the list:

   /opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get NNM_ADD_ON_PRODUCTS

   — Master Collector in a Standalone HA Cluster

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

   ➤ When Master Collector is installed in a standalone HA Cluster, make sure that the following command shows a passive Master Collector in the list:

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

2. Delete the following files to remove the passive Master Collector (s) from the maintenance mode:

   On Windows

   `%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or
   `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

`/var/opt/OV/hacluster/<resource_group>/maintenance`

`/var/opt/OV/hacluster/<resource_group>/maint_NNM`

3 Delete the following files to remove the active Master Collector from the maintenance mode:

On Windows

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

`/var/opt/OV/hacluster/<resource_group>/maintenance`

`/var/opt/OV/hacluster/<resource_group>/maint_NNM`

Uninstalling Master Collector Patch in HA

To uninstall Master Collector Patch, follow the steps listed below in the same order:

- Uninstall Master Collector Patch from Passive Master Collector on page 37
- Uninstall Master Collector Patch from Active Master Collector on page 39
- Reconfigure Passive Master Collectors in HA on page 39

Uninstall Master Collector Patch from Passive Master Collector

To uninstall Master Collector Patch from passive Master Collectors in HA, follow these steps:

1 Move the HA cluster in maintenance mode by creating the following files on each passive Master Collector:

On Windows

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

```
/var/opt/OV/hacluster/<resource_group>/maintenance
/var/opt/OV/hacluster/<resource_group>/maint_NNM
```

2 Log on to each passive Master Collector as an administrator on Windows and as root on Linux.

3 Run the following command to remove the Master Collector temporarily from HA cluster:

On Windows

— NNMi and the Master Collector in the same cluster

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

When NNMi and the Master Collector are in the same cluster, make sure that the following command does not show a passive Master Collector in the list:

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

— Master Collector in a Standalone HA Cluster

```
%TrafficInstallDir%\misc\nnm\ha\nnmhaunconfigure.ovpl TRAFFIC
<resource_group>
```

When Master Collector is installed in a standalone HA Cluster, make sure that the following command does not show a passive Master Collector in the list:

```
%TrafficInstallDir%\misc\nnm\ha\nnmhaclusterinfo.ovpl -group
<resource_group> -nodes
```

On Linux

— NNMi and the Master Collector in the same cluster

```
/opt/OV/misc/nnm/ha/nnmhaunconfigure.ovpl NNM -addon TRAFFIC
```

When NNMi and the Master Collector are in the same cluster, make sure that the following command does not show passive Master Collector in the list:

```
/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get
NNM_ADD_ON_PRODUCTS
```

— Master Collector in a Standalone HA Cluster

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

When Master Collector is installed in a standalone HA Cluster, make sure that the following command does not show a passive Master Collector in the list:

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

4 Uninstall the Master Collector Patch as described in the patch text.

Do NOT reconfigure HA again on this passive Master Collector until the patch is uninstalled successfully.

Uninstall Master Collector Patch from Active Master Collector

To uninstall Master Collector Patch from active Master Collector in HA, follow these steps:

1. Move the HA cluster in maintenance mode by creating the following files on active Master Collector:

   On Windows

   `%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

   `%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

   On Linux

   `/var/opt/OV/hacluster/<resource_group>/maintenance`

   `/var/opt/OV/hacluster/<resource_group>/maint_NNM`

2. Run the following command to stop the Master Collector process on active Master Collector:

   On Windows

   `%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstop.ovpl --HA` or **`%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstop.ovpl --HA`**

   On Linux

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

3. Uninstall the Master Collector Patch as described in the patch text.

   Do NOT unconfigure HA on the active Master Collector.

4. Run the following command to start the Master Collector process on active Master Collector:

   On Windows

   `%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl --HA` or **`%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl --HA`**

   On Linux

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

Reconfigure Passive Master Collectors in HA

To reconfigure passive Master Collector in HA, follow these steps:

1. On each passive Master Collector, run the following command to reconfigure HA.

   On Windows

   — NNMi and the Master Collector in the same cluster

%NnmInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl NNM –addon TRAFFIC

➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command shows a passive Master Collector in the list:

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

— Master Collector in a Standalone HA Cluster

%TrafficInstallDir%\misc\nnm\ha\nnmhaconfigure.ovpl TRAFFIC

➤ When Master Collector is installed in a standalone HA Cluster, make sure that the following command shows a passive Master Collector in the list:

%TrafficInstallDir%\misc\nnm\ha\nnmhaclusterinfo.ovpl –group <resource_group> -nodes

For Linux

— NNMi and the Master Collector in the same cluster

/opt/OV/misc/nnm/ha/nnmhaconfigure.ovpl NNM –addon TRAFFIC

➤ When NNMi and the Master Collector are in the same cluster, make sure that the following command shows passive Master Collector in the list:

/opt/OV/misc/nnm/ha/nnmhaclusterinfo.ovpl -config NNM -get NNM_ADD_ON_PRODUCTS

— Master Collector in a Standalone HA Cluster

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

➤ When Master Collector is installed in a standalone HA Cluster, make sure that the following command shows a passive Master Collector in the list:

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

2 Delete the following files to remove the passive Master Collector (s) from the maintenance mode:

On Windows

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

`/var/opt/OV/hacluster/<resource_group>/maintenance`

`/var/opt/OV/hacluster/<resource_group>/maint_NNM`

3 Delete the following files to remove the active Master Collector from the maintenance mode:

On Windows

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maintenance`

`%NnmDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM` or `%TrafficDataDir%\nmsas\traffic-master\hacluster\<resource_group>\maint_NNM`

On Linux

`/var/opt/OV/hacluster/<resource_group>/maintenance`

`/var/opt/OV/hacluster/<resource_group>/maint_NNM`

Upgrading the NNM iSPI Performance for Traffic in an HA Cluster

Master Collector and NNMi in the Same HA Cluster

To upgrade the NNM iSPI Performance for Traffic in an environment where the Master Collector and NNMi exist in the same HA cluster, follow these steps:

1. On the primary (active) node, follow these steps:
   a. Put the NNMi resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

      On Windows

      `%NnmDataDir%\hacluster\`*<resource_group_name>*

      On Linux

      `/var/opt/OV/hacluster/`*<resource_group_name>*

   b. Make sure all processes are running.
   c. Upgrade NNMi to the version 9.21 or higher.
   d. Start NNMi by running the following command:

      `ovstart -c ovjboss`

   e. Make sure NPS is already upgraded to the version 9.20 (Patch 1) at this time.
   f. Stop the ETL processes on the NPS system. To stop the ETL processes, run the following command:

      On Windows

      `%NnmInstallDir%\NNMPerformanceSPI\bin\stopETL.ovpl`

      On Linux

      `/opt/OV/NNMPerformanceSPI/bin/stopETL.ovpl`

   g. Back up the `perfspi.pm` file. The `perfspi.pm` file is available at the following location:

      On Windows

`%NnmInstallDir%\nonOV\perl\a\lib\5.8.8`

On Linux

`/opt/OV/nonOV/perl/a/lib/5.8.8`

h Apply the QCCR1B109116 hotfix on the NPS system. Contact HP Support to obtain this hotfix.

i Stop the Master Collector:

`nmstrafficmasterstop.ovpl --HA`

j Upgrade the HP NNMi Extension for iSPI Performance for Traffic to the version 9.20.

Make sure that the ETL processes on the NPS system are stopped.

k Restart the `ovjboss` process:

– **`ovstop -c ovjboss`**

– **`ovstart -c ovjboss`**

l Upgrade the Master Collector to the version 9.20.

m Start the Master Collector:

`nmstrafficmasterstart.ovpl --HA`

2 On the secondary (passive) node, follow these steps:

a Put the NNMi resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

On Windows

`%NnmDataDir%\hacluster\`*<resource_group_name>*

On Linux

`/var/opt/OV/hacluster/`*<resource_group_name>*

b Make sure all NNMi processes are running.

c Upgrade NNMi to the version 9.20.

d Upgrade the HP NNMi Extension for iSPI Performance for Traffic and Master Collector to the version 9.20.

3 Repeat step 2 on all other passive nodes in the cluster.

4 Remove the `maintenance` file from all passive nodes in the cluster.

5 Remove the `maintenance` file from the active node.

6 Fail over to a passive node.

7 Run the following command on the node that is currently active:

On Windows

```
%NnmInstallDir%\support\nnmtwiddle.ovpl -host <NNMi hostname> -port
80 -u system -p <password> invoke com.hp.ov.nms.topo
ervice=NetworkApplication setApplicationService traffic <master
hostname> http 12080
```

On Linux

```
/opt/OV/support/nnmtwiddle.ovpl -host <NNMi hostname> -port 80 -u
system -p <password> invoke com.hp.ov.nms.topo
ervice=NetworkApplication setApplicationService traffic <master
hostname> http 12080
```

In this instance, <NNMi hostname> is the physical hostname of NNMi and <master hostname> is the virtual hostname of the Master Collector; <password> is the password for the NNMi system user.

8 Repeat step 6 and step 7 for each passive node.

9 Failback to the node that was active in the beginning of this procedure.

10 Start the ETL processes on the NPS system. To start the ETL processes, run the following command:

On Windows

```
%NnmInstallDir%\NNMPerformanceSPI\bin\startETL.ovpl
```

On Linux

```
/opt/OV/NNMPerformanceSPI/bin/startETL.ovpl
```

Master Collector in a Standalone HA Cluster

To upgrade the NNM iSPI Performance for Traffic in an environment where the Master Collector exists in an HA cluster, follow these steps:

1 Upgrade NNMi and NPS to the version 9.20.

2 *Only when the Master Collector is on Windows.* Follow these steps:

a Go to the following directory on the NNMi management server:

`%NnmInstallDir%\misc\nnm\ha`

b Copy the `nnmhamscs.vbs` file.

c Place the `nnmhamscs.vbs` file into the `%NnmInstallDir%\misc\nnm\ha` directory on all Master Collector systems in the HA cluster.

d Stop the resource group on the primary (active) node:

```
%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhastoprg.ovpl
TRAFFIC <resource_group>
```

e Copy the `nnmhamscs.vbs` file from the `%NnmInstallDir%\misc\nnm\ha` directory and place the copied file in the `%TrafficInstallDir%\traffic-master\hacluster\`*<resource_group>* directory as `hamscs.vbs`. on the active Master Collector system in the HA cluster.

f Open the `hamscs.vbs` file with a text editor.

g Search for the string `"product_name"` (include the `" "` characters) and replace it with the string `TRAFFIC`.

h Save the file.

i Copy the modified `hamscs.vbs` file into the `%TrafficInstallDir%\traffic-master\hacluster\`*<resource_group> directory* on all secondary (passive) Master Collector systems in the cluster.

j Start the resource group on the primary (active) node:

%TrafficInstallDir%\traffic-master\misc\nnm\ha\nnmhastartrg.ovpl TRAFFIC *<resource_group>*

3 On the primary (active) node, follow these steps:

a Put the Master Collector resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

On Windows

`%TrafficDataDir%\nmsas\traffic-master\hacluster\`*<resource_group_name>*

On Linux

`/var/opt/OV/hacluster/`*<resource_group_name>*

b Stop the Master Collector:

nmstrafficmasterstop.ovpl --HA

c Run the following command:

encrypttrafficpasswd.ovpl --nnmEncrypt=<*web_service_password*>

In this instance, <*web_service_password*> is the password of the web service user that you used while installing the HP NNMi Extension for iSPI Performance for Traffic.

d Open `nnm.extended.properties` file with a text editor from the following location:

On Windows

`%NnmDataDir%\shared\traffic-master\conf`

On Linux

`/var/opt/OV/shared/traffic-master/conf`

e Copy the value of the property `com.hp.ov.nms.spi.traffic-master.Nnm.password`.

f Paste this value against the property `com.hp.ov.nms.spi.traffic-master.Nnm.password` in the `nnm.extended.properties` file that is available in the following location:

On Windows

`%HA_MOUNT_POINT%\NNM\dataDir\shared\traffic-master\conf`

On Linux

`$HA_MOUNT_POINT/NNM/dataDir/shared/traffic-master/conf`

g Upgrade the Master Collector to the version 9.20.

h *Only on Windows.* Run the following command:

nmstrafficmastersetuser.ovpl --username <*username*> **--password** <*password*>

In this instance, <*username*> is the user that has the read/write access rights to the shared network directory. For more information, see the *Configuring a User for the Master Collector System* section in the *HP Network Node Manager iSPI Performance for Traffic Software Installation Guide*.

i Start the Master Collector:

nmstrafficmasterstart.ovpl --HA

4 On the secondary (passive) node, follow these steps:

a Put the Master Collector resource group to the HA maintenance mode by placing the `maintenance` file under the following directory:

On Windows

`%TrafficDataDir%\nmsas\traffic-master\hacluster\`*<resource_group_name>*

On Linux

`/var/opt/OV/hacluster/`*<resource_group_name>*

b Upgrade the Master Collector to the version 9.20.

c *Only on Windows.* Run the following command:

`nmstrafficmastersetuser.ovpl --username` *<username>* **`--password`** *<password>*

In this instance, *<username>* is the user that has the read/write access rights to the shared network directory. For more information, see the *Configuring a User for the Master Collector System* section in the *HP Network Node Manager iSPI Performance for Traffic Software Installation Guide*.

5 Repeat step 4 on all other passive nodes.

6 Delete the `maintenance` file from all passive nodes in the cluster.

7 Delete the `maintenance` file from the active node.

8 Optionally, test the configuration by failing over to a passive node and failing back to the original node.

7 Deploying NNM iSPI for Traffic in an Application Failover Environment

NNM iSPI Performance for Traffic cannot be configured to support application failover. However, it can exist in an environment where NNMi is installed in an application failover environment. The deployment configuration supported in this case are:

- NNMi is installed in an application failover environment, as primary and secondary instances on two separate systems.
- The NNM iSPI Performance for Traffic Master and Leaf Collectors are installed on separate non-co-located systems.
- Only one instance of a Master Collector should be co-located with the NNM iSPI Performance for Metrics and Network Performance Server.
- The HP NNMi Extension for iSPI Performance for Traffic should be installed on both the primary and secondary systems.
- The NNM iSPI Performance for Traffic licenses must be installed on both primary and secondary systems.
- The Master Collector must be configured on both primary and secondary systems to point to the following:
  - The NNMi instance (provide the physical hostname)
  - The network share drive where the NNM iSPI Performance for Metrics data files folder on the HA system is shared.

8 Tuning the NNM iSPI Performance for Traffic

HP recommends that after installation, you configure the NNM iSPI Performance for Traffic to optimize its performance in small, medium, and large tier environment by tuning a set of parameters. HP also recommends that you configure the report data retention period for the flow data generated by Master Collector.

Tuning the Master Collector and Leaf Collector

The NNM iSPI Performance for Traffic provides you with a set of parameters that you can configure for the optimum performance of the iSPI in a large-scale environment. These tuning parameters are available in the following files:

- On the Master Collector system

  On Windows

  `%NnmDataDir%\nmsas\traffic-master\conf\nms-traffic-master.address.properties` or `%TrafficDataDir%\nmsas\traffic-master\conf\nms-traffic-master.address.properties`

  On Linux

  `/var/opt/OV/nmsas/traffic-master/conf/nms-traffic-master.address.properties`

- On the Leaf Collector system

  On Windows

  `%NnmDataDir%\nmsas\traffic-leaf\conf\nms-traffic-leaf.address.properties` or `%TrafficDataDir%\nmsas\traffic-leaf\conf\nms-traffic-leaf.address.properties`

  On Linux

  `/var/opt/OV/nmsas/traffic-leaf/conf/nms-traffic-leaf.address.properties`

The *NNM iSPI Performance for Traffic Support Matrix* defines the following types of environments:

- Entry
- Small
- Medium
- Large

The *NNM iSPI Performance for Traffic Support Matrix* also provides ideal values of tuning parameters for each type of environment. It is recommended that you tune those parameters according to the values provided in *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*.

To configure the tuning parameters of the NNM iSPI Performance for Traffic after installation, follow these steps:

After installation, you must perform these steps.

1. Identify the type of your environment—entry, small, medium, or large (see *NNM iSPI Performance for Traffic Support Matrix*). To determine the rate of flow records in your network, run the `nmstrafficflowanalysistool.ovpl` command. For more information, see *Reference pages* for this tool.
2. Note down the recommended values for the tuning parameters from *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*.
3. Follow these steps on each Leaf Collector system:
   a. Log on to the Leaf Collector system as an administrator on Windows and as root on Linux.
   b. Open the `nms-traffic-leaf.address.properties` file with a text editor.

      HP recommends that you do not modify the following properties in the `nms-traffic-leaf.address.properties` file available on the Leaf Collector system:

      - *Collector Name*`.flowrecord.pool.size`
      - *Collector Name*`.topn.flowrecord.pool.size`

      In this instance, *Collector Name* is the name of the Leaf Collector instance. The properties *Collector Name*`.flowrecord.pool.size` and *Collector Name*`.topn.flowrecord.pool.size` may be added after you install NNM iSPI Performance for Traffic 9.20 Patch 1 and the Leaf Collector starts receiving IP flow data from different routers.

   c. Set the `datagram.pool.size` property to the value recommended for Datagram for your environment in *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*.
   d. Set the `flowrecord.pool.size` property to the value recommended for FlowRecord for your environment in *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*. HP recommends that you set this property to the recommended value *only* once.

      Increase in FlowRecord pool size requires additional memory. For every 100K increase in FlowRecord pool size, you must provide additional 200 MB memory. For example, if you increase FlowRecord pool size by 200K, you must add additional 400MB to the Xmx value for Leaf Collector.

   e. Set the `topn.flowrecord.pool.size` property to the value recommended for TopN Flowrecord for your environment in *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*. HP recommends that you set this property to the recommended value *only* once.

      Increase in TopN FlowRecord pool size requires additional memory. For every 100K increase in TopN FlowRecord pool size, you must provide additional 200 MB memory. For example, if you increase TopN FlowRecord pool size by 500K, you must add additional 1GB to the Xmx value for Leaf Collector.

   f. Save the file.

g Restart the Leaf Collector by running the following command:

On Windows

`%NnmInstallDir%\traffic-leaf\bin\nmstrafficleafstart.ovpl` or `%TrafficInstallDir%\traffic-leaf\bin\nmstrafficleafstart.ovpl`

On Linux

`/opt/OV/traffic-leaf/bin/nmstrafficleafstart.ovpl`

During the operation, the NNM iSPI Performance for Traffic automatically updates the values of these parameters. With every automatic update of tuning parameters, the NNM iSPI Performance for Traffic creates a new entry in the Flow Processing Status view in the NNMi console.

4 Follow these steps on the Master Collector system:

a Log on to the Master Collector system as an administrator on Windows and as root on Linux.

b Open the `nms-traffic-master.address.properties` file with a text editor.

c Set the `nms.traffic-master.maxflowrecord.inqueue` property to the value recommended for Master Queue Size for your environment in *Table 4* in *NNM iSPI Performance for Traffic Support Matrix*.

d Save the file.

e Restart the Master Collector by running the following command:

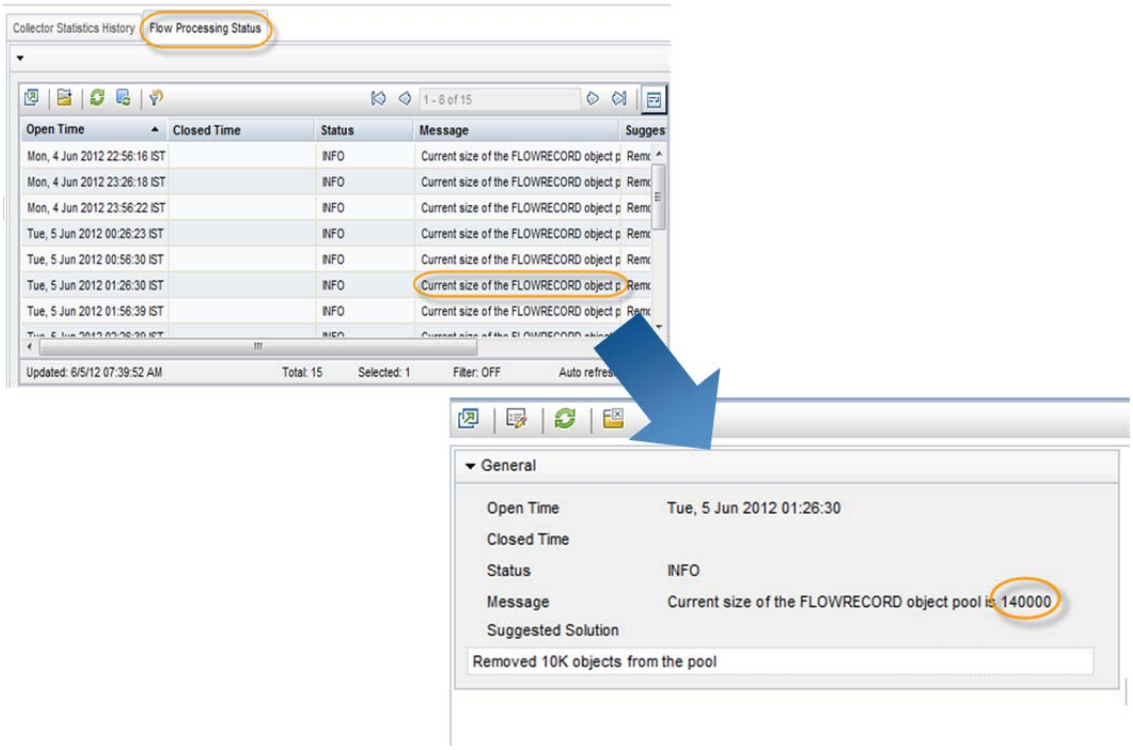
On Windows

`%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl` or `%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl`

On Linux

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

Figure 5 Flow Processing Status View Showing Automatic Update of Tuning Parameters



Additional Tuning Parameters

The NNM iSPI Performance for Traffic is unable to write files on the NNMi system when sufficient disk space is not available or there are large number of pending files for each type of report to be written to the NNMi system.

NNM iSPI Performance for Traffic writes files to the NNMi system in the *%NnmDataDir%*`\shared\perfSpi\datafiles` directory on Windows and `/var/opt/OV/shared/perfSpi/datafiles` directory on Linux.

To ensure that NNM iSPI Performance for Traffic writes files successfully to the NNMi system, NNM iSPI Performance for Traffic detects the amount of disk space available on the NNMi system and number of pending files of each type to be written to the NNMi system. Before writing files to the NNMi system, NNM iSPI Performance for Traffic reads these values from the Master Collector configuration. By default, minimum amount of disk space required on the NNMi system for Master Collector to write files to the NNMi system is 1 GB and maximum number of pending files of each type that can be queued when writing files to the NNMi system is 100.

To modify the default values set in NNM iSPI Performance for Traffic to detect these values, follow these steps on the Master Collector system:

1. Log on to the Master Collector system as an administrator on Windows and as root on Linux.
2. Open the `nms-traffic-master.address.properties` file with a text editor.
3. Set the following properties depending on your requirements:

a `nnm.shared.drive.size`: Defines the minimum amount of disk space required on the NNMi system for Master Collector to write files to the NNMi system.

b `nps.max.pending.files`: Defines the maximum number of pending files of each type that can be queued when writing files to the NNMi system.

4 Save the file.

5 Restart the Master Collector by running the following command:

On Windows

`%NnmInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl` **or** `%TrafficInstallDir%\traffic-master\bin\nmstrafficmasterstart.ovpl`

On Linux

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

Enabling Subnet Details on Traffic Reports

The NNM iSPI Performance for Traffic enables you to view Source Subnet Address and Destination Subnet Address in the Traffic reports. However, these subnet details are not visible on the Traffic reports by default. You must perform additional configuration steps to be able to view subnet details on the NNM iSPI Performance for Traffic reports. Enabling the subnet details may increase the load on the NNM iSPI Performance for Traffic and NPS. Therefore, you may require additional system resources, such as CPU, memory, and disk space.

Subnet details are available in the Report Options in the **Grouping By** list on the following reports:

- Interface Traffic reports: Most Changed, Top N, Top N Chart, and Top N Table
- Interface Traffic 15-minute and Interface Traffic 1-minute reports: Top Interfaces reports for Top N Analysis, Top N Chart Analysis, and Top N Table Analysis

When the subnet details are disabled, the Source Subnet Address and Destination Subnet Address options are available in the **Grouping By** list. However, the subnet address is shown on the report as `0.0.0.0/0`.

To view subnet details in the Traffic reports, follow these steps on Leaf Collector system:

1 Log on to the Leaf Collector system as an administrator on Windows and as root on Linux.

2 Open the `nms-traffic-leaf.address.properties` file with a text editor.

3 Add the **`enable.subnet.report`** property and set it to **`true`**.

4 Save and close the file.

5 Restart the Leaf Collector by running the following command:

On Windows

`%NnmInstallDir%\traffic-leaf\bin\nmstrafficleafstart.ovpl` **or** `%TrafficInstallDir%\traffic-leaf\bin\nmstrafficleafstart.ovpl`

On Linux

`/opt/OV/traffic-leaf/bin/nmstrafficleafstart.ovpl`

Tuning the Retention Period

The retention period is the time for which the detailed and summarized data generated by the Master Collector is stored on the NPS system for reporting purposes. The stored data contributes to the NPS system disk usage. On the NPS system, after the database occupies a portion of the disk, you cannot reduce the database (*.db) files and reuse that disk space for operating system. To reduce the disk usage you can modify the retention periods for the extension pack provided by NPS or individual extension packs provided by NNM iSPI Performance for Traffic. The retention period value set for the extension packs provided by NNM iSPI Performance for Traffic overrides the retention period value set for the extension pack provided by NPS. For information on changing retention periods for NPS, see the *HP Network Node Manager iSPI Performance for Metrics Installation Guide*.

Each extension pack provided by NNM iSPI Performance for Traffic is installed with different retention periods for the detailed and summarized data. Following parameters define these retention periods:

- `PRSPI_DataRetention_Raw`: Number of days for which the detailed data is stored. The detailed data for NNM iSPI Performance for Traffic is stored in raw tables only. Therefore, to change the retention period, you must modify PRSPI_DataRetention_Raw parameter. The NNM iSPI Performance for Traffic extension packs provide the default retention periods listed in the following table:

Table 3 Retention Period Default Values

Extension Pack	Default Value
Interface Traffic	3
Interface Traffic 1 Minute	30
Interface Traffic 15 minutes	400

- `PRSPI_DataRetention_Hour`: Number of days for which the data summarized every hour is stored.

  ➤ NNM iSPI Performance for Traffic does not store data in summary tables. Modifying this parameter will not change the retention period.

- `PRSPI_DataRetention_Day`: Number of days for which the data summarized every day is stored.

  ➤ NNM iSPI Performance for Traffic does not store data in summary tables. Modifying this parameter will not change the retention period.

- `PRSPI_SUMMARY_Policy`: Summarization policy for the extension pack. HP recommends that you do not set this parameter for any extension pack of NNM iSPI Performance for Traffic.

To change the default retention period for individual extension pack, follow these steps:

1. Log on to the NPS system.
2. Stop the ETL process.
3. Open `customConfig.cfg` file with a text editor:

   On Windows

<NPS_Data_Dir>`\NNMPerformanceSPI\rconfig\<extensionpack_name>\customConfig.cfg`

In this instance, *<NPS_Data_Dir>* is the directory where NPS configuration and data files are stored after you install NPS.

On Linux

`/var/opt/OV/NNMPerformanceSPI/rconfig/<extensionpack_name>/customConfig.cfg`

4 Set the parameter `PRSPI_DataRetention_Raw` to modify the number of days for which the detailed data is stored.

Modifying the retention period can have significant impact on the disk usage.

5 Save and close `customConfig.cfg` file.

6 Restart the ETL process.

Enhancing NPS Performance

NPS processes the NNM iSPI Performance for Traffic files slowly that results in increasing the number of pending files for each type of report to be written to the NNMi system. You can increase the performance of the NPS system by tuning the ETL. For more information, see Tuning the ETL for NPS on page 55.

You can also enhance the performance of NPS by tuning the hardware. Optimize the disk and file system when large amount of data processing is required to reduce the disk latency and I/O wait for optimized record processing and reporting. For more information, see Disk Usage Recommendations on page 56.

Tuning the ETL for NPS

To tune the ETL for NPS, follow these steps:

1 Log on to the NPS system.

2 Stop the ETL process.

3 Open `customConfig.cfg` file with a text editor:

On Windows

<NPS_Data_Dir>`\NNMPerformanceSPI\rconfig\<extensionpack_name>\customConfig.cfg`

In this instance, *<NPS_Data_Dir>* is the directory where NPS configuration and data files are stored after you install NPS.

On Linux

`/var/opt/OV/NNMPerformanceSPI/rconfig/<extensionpack_name>/customConfig.cfg`

4 Set the following parameters for each extension pack to tune the ETL for NPS:

> Increasing the tuning parameters for ETL process of NPS to values listed in Table 6, Table 7, and Table 8 result in significant increase in CPU utilization. Make sure that there is sufficient CPU bandwidth available before increasing these parameters.

- Set the `ETL_MaxChildProcs` parameter to the value recommended for number of child processes for your environment in Table 6 in *NNM iSPI Performance for Traffic Support Matrix*.
- Set the `ETL_MaxRecordsPerChild` parameter to the value recommended for maximum number of records per child process for your environment in Table 7 in *NNM iSPI Performance for Traffic Support Matrix*.
- Set the `ETL_MaxMetricsFilesPerBatch` parameter to the value recommended for number of files per batch for your environment in Table 8 in *NNM iSPI Performance for Traffic Support Matrix*.

5 Save and close `customConfig.cfg` file.

6 Restart the ETL process.

Disk Usage Recommendations

To reduce the disk latency and I/O wait, follow these recommendations:

- Create the storage locations `/var/opt/OV`, `IQ_SYSTEM_TEMP`, and `USER_MAIN` on different disks on SAN. Run the following command to set the location and size of these storage locations:

  For Windows

  *<NPS_Install_Dir>***\NNMPerformanceSPI\bin\dbsize.ovpl**

  For Linux

  /opt/OV/NNMPerformanceSPI/bin/dbsize.ovpl
- Set `IQ_SYSTEM_TEMP` to a minimum value of 100 GB.
- Set the disk cache ratios to 50/50 read/write
- Use raw disks for storage locations

For more information, contact your Storage Area Network administrator.

9 NNM iSPI Performance for Traffic Logging

To monitor the performance of the Master Collector or Leaf Collector, or to observe how NNM iSPI Performance for Traffic processes and services are behaving, you can view log files that display a history of process and service activity of the NNM iSPI Performance for Traffic. These files are available in the following directory:

- Master Collector
  - *Windows*

    `%NnmDataDir%\nmsas\traffic-master\log\traffic-master` or `%TrafficDataDir%\nmsas\traffic-master\log\traffic-master`
  - *Linux*

    `/var/opt/OV/log/traffic-master`
- Leaf Collector
  - *Windows*

    `%NnmDataDir%\nmsas\traffic-leaf\log\traffic-leaf` or `%TrafficDataDir%\nmsas\traffic-leaf\log\traffic-leaf`
  - *Linux*

    `/var/opt/OV/log/traffic-leaf`

The NNM iSPI Performance for Traffic stores the log messages in the following log files:

- For the Leaf Collector: `traffic_spi_leaf.log`
- For the Master Collector: `traffic_spi_master.log`

The NNM iSPI Performance for Traffic logs messages at the following logging levels:

- SEVERE: Events that relate to abnormal Master Collector or Leaf Collector behavior.
- WARNING: Events that indicate potential problems.
- INFO: Messages written to the NNMi console (or its equivalent) and all messages included in the WARNING logging level.

10 Deploying NNM iSPI Performance for Traffic in Global Network Management Environment

NNM iSPI Performance for Traffic offers full support for deployment in a Global Network Management environment. Each instance has the following components:

- NNMi
- NNM iSPI Performance for Metrics and Network Performance Server
- The NNM iSPI Performance for Traffic Master Collector
- The NNM iSPI Performance for Traffic Leaf Collectors

The NNMi in the Global Manager receives data from the Regional Managers. The Traffic Master Collector in the Global Manager can be configured to receive data from the Regional Traffic Master Collectors in the following ways:

- The Traffic Master Collector in the Global Manager can receive data from the Traffic Master Collector in the Regional Manager. In this case, you must add the regional Traffic Master Collector as a remote Master source in the global Traffic Master Collector. This ensures that the complete set of data received by the regional Master Collector is forwarded to the global Traffic Master Collector. In the above scenario the global Traffic Master Collector receives data processed by both Traffic Leaf 1 and Traffic Leaf 2.
- The Traffic Master Collector in the Global Manager can receive data directly from a regional Leaf Collector system, bypassing the regional Traffic Master Collector. In this case the regional Traffic Leaf Collector (Traffic Leaf 3 in the above scenario) can be added as a leaf remote source to the global Master collector. This will ensure that the data received by all the Leaf Collectors on the remote Leaf Collector system is sent to the regional Traffic Master Collector as well as the global Traffic Master Collector.

The regional Traffic Master Collector or the regional Traffic Leaf Collector) can only be configured to send data to the global Traffic Master Collector. The global Master Collector cannot administer and manage these components.

Add all the regional Master Collectors as remote Master sources to the global Master Collector.