NNM iSPI for Performance

For the Solaris Operating System

Software Version: 8.10.000

Installation Guide

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Contents

1 Introduction

The NNM iSPI for Performance collects data from NNM, builds data cubes, executes queries in response to user selections, and displays query results in web-based reports. Each report belongs to an extension pack. Version 8.10 of the NNM iSPI for Performance includes the following extension packs:

- Interface Health
- Component Health
- iSPI Diagnostics

The reports in Interface Health display statistics related to interface availability, interface utilization, volume, discards, errors, and exceptions. The reports in Component Health display statistics for memory, buffer, and CPU utilization. The reports in the iSPI Diagnostics extension pack tell you how various iSPI processes are performing and whether disk space is adequate.

Business Intelligence software, licensed from Cognos Incorporated, is the foundation of the NNM iSPI for Performance. Cognos software provides a storage mechanism (data cubes), the means for aggregating stored data (Cognos Transformer), and the web-based platform for reporting and analyzing the data.

Software Components

The Performance SPI includes the following software:

- HP Embedded Reporting System (HP ERS)
- Preprocessor
- Aggregation Engine
- Cognos Transformer

- Demonstration data
- Extension packs containing data processing rules and report definitions

The Preprocessor reads data the NNM collected, formats the data, and exports the results to the Aggregation Engine and to Cognos Transformer. The Aggregation Engine runs a set of scripts against the data and exports the results to Cognos Transformer.

Using input from the Preprocessor, Cognos Transformer creates one NRT data cube for each extension pack. Using input from the Aggregation Engine, Cognos Transformer creates one summary data cube for each extension pack. Cognos Transformer also regenerates a detail archive cube on an hourly basis, 24 times a day. After 24 updates, Cognos Transformer finalizes the current day's detail archive cube.

Installing the iSPI

Version 8.1 of the Performance SPI requires version 8.1 of NNM. If you are upgrading the Performance SPI from version 8.01 to version 8.1, you must upgrade NNM first.

If NNM is polling fewer than 5,000 interfaces for performance data, you can usually assume that installing the Performance SPI on the same server with NNM is safe. If NNM is polling more than 5,000 interfaces, we recommend installing the Performance SPI on a dedicated server. However, it is possible that a single, high-end server with a sufficient number of CPUs, sufficient memory, and high-performance storage, could accommodate *both* NNM and the Performance SPI even if NNM is polling well over 5, 000 interfaces. It just depends on how the server is configured.

The next few paragraphs provide a quick summary of the install. Since installing the Performance SPI is easy, whether you're about to install the iSPI on the same server with NNM, or on a dedicated server, this text may be the *only* text you need. But if you want the complete story, go to:

- Chapter 3 for help with a same-server install (you are installing the iSPI on the same server with NNM)

- Chapter 4 for help with a dedicated-server install (you are installing the iSPI on a separate, dedicated server)

Same-Server Install (NNM and the iSPI on the Same Server)

Install the Performance SPI by inserting the DVD in the drive and following the prompts displayed by HP Software Installer. While you are following the prompts, several automatic install checks run in the background. If your system meets the requirements described in Chapter 2, the checks will pass quickly and no warning or error messages will appear. If an install check displays a warning, you can either continue the installation or quit the installation. If an install check produces an error, you must quit.

Dedicated Server Install (iSPI on a Separate, Dedicated Server)

Install the Performance SPI by locating the enablement script in the bin directory on the NNM server, launching it, and responding to the prompts. When the enablement script completes, it displays the path to the datafiles folder on NNM.

Next, insert the iSPI DVD in the drive on the dedicated server, launch HP Software Installer, and respond to the prompts. When the Performance SPI Configuration Utility opens, near the end of the install, supply the path to the datafiles folder on NNM and start the Performance SPI by clicking **Start**.

By running the enablement script first, then installing the Performance SPI, you are giving NNM a head start on performance polling. If NNM has a head start on performance polling, the Performance SPI will have more data to process once it is running.

If you have multiple NNM servers in a cluster, be sure to run the enablement script multiple times, once per server. We recommend running the enablement script on each server *before* configuring the cluster for High Availability.

The Single Sign-On Feature

Installing the Performance SPI enables a security mechanism known as Single Sign-on (SSO). SSO allows the iSPI to recognize the same usernames and passwords that the NNM Console recognizes. When SSO is enabled, a user who is already logged in to NNM can move from NNM to an iSPI report without having to log in a second time.

For SSO to work, the iSPI and NNM must share the same domain name and the URL that launches NNM must include NNM's fully-qualified domain name (FQDN). If a user points a browser at a URL using an unqualified host name, the SSO servlet will display a login window, forcing the user to log in a second time.

If NNM and the iSPI are installed on the same server, and NNM is not yet configured with a FQDN, you can achieve the same results—no second login window when you move from NNM to a report—by using NNM's IP address in the URL.

The Report Menu

Installing the Performance SPI adds the following URL launch action to the **Actions** menu on the NNM console:

   Reporting - Report Menu

This action is visible from any node view, any interface view, any component view, and any incident view. If you select an object in NNM, then invoke this action, the object you selected will be used as a filter. If you invoke this action with no object selected, the target report will include data for the whole network—every node that sends performance data to NNM.

The Report Menu includes the following tabs:

• Interface Health

• Component Health

• iSPI Diagnostics

Click a tab to display report thumbnails and links to reports. Clicking a link to a report does not open a pre-generated report file—clicking a link runs the report in real time. Some reports may take several seconds to display. The run-time is longer the first time the report runs. Subsequent run-times will be quicker. Run-times are always longer following a prolonged period of inactivity.

▶ The iSPI includes a single, path-oriented report that is not listed on the Report Menu. Path Health pulls data from two sources, the NRT data cube for Interface Health and NRT data cube for Component Health. You can launch this report from a Path View in NNM.

Interface Health Reports

The Interface Health extension pack contains the following reports:

1 Calendar
2 Chart Detail Live
3 Chart Detail Archive
4 Dashboard Summary
5 Dashboard Live
6 Data Explorer Summary
7 Data Explorer Live
8 Data Explorer Archive
9 Heat Chart Summary
10 Headline Summary
11 Overview Summary
12 Most Changed Summary
13 Top N Summary
14 Top N Live
15 Top N Archive

See Appendix A, Metrics Per Extension Pack for a list of metrics. Some of the metrics in Appendix A are calculated by the iSPI and some are imported directly from NNM.

Component Health Reports

The Component Health extension pack contains the following reports:

1 Calendar
2 Chart Detail Live
3 Chart Detail Archive
4 Dashboard Summary
5 Dashboard Live

6   Data Explorer Summary

7   Data Explorer Live

8   Data Explorer Archive

9   Heat Chart Summary

10   Headline Summary

11   Most Changed Summary

12   Top N Summary

13   Top N Live

14   Top N Archive

See Appendix A, Metrics Per Extension Pack for a list of metrics. Some of the metrics in Appendix A are calculated by the iSPI and some are imported directly from NNM.

iSPI Diagnostics Reports

The iSPI Diagnostics extension pack contains five reports:

• Node Count (Cumulative vs. Current)

• Disk Space Free

• Element Count (Cumulative)

• Process Duration Detail

• Process Duration Top 10

iSPI reports rank elements, display trends, and track exceptions. Ranking sorts element by utilization (or by some other chosen metric), allowing you to identify network elements with unusually high or unusually low values. Trending looks at a period of time and lets you see whether performance is stable, worsening, or improving.

Exception tracking looks at threshold conditions, and tracks threshold conditions over time. Note that iSPI reports cannot track exceptions unless the NNM administrator has set thresholds for performance metrics. This is a manual step. NNM does not set default thresholds automatically.

If you do not apply filters, or if you are not launching pre-filtered reports from NNM views, reports will include data for every element that NNM is polling for performance data. Filters let you refocus the report on a subset of your network inventory. You can also use filters to refocus the report on a different time period, on a particular day of the week, or on a particular hour of the day. In addition to applying filters, you can bring a different set of metrics into the report. You can also modify the scope of ranking (go from *Top 10* to *Top 25)* and change the direction of ranking (go from *Top 5* to *Bottom 5)*.

Data Retention

An NRT data cube generates *live reports* based on recently sampled data. The most recent data in this cube is data from the most recent poll; the oldest data is six hours old. Run a live report when you want to investigate current performance. Most live reports default to Last 15 Minutes. If desired, you can change the default to last 5 minutes, last 1 minute, last hour, last 2 hours, or last 6 hours.

A summary cube generates *summary reports*. The newest data in this cube is data for yesterday, ending at midnight last night; the oldest data is 70 days old. Once a day, a new day of data is added to this cube, and once a day, the oldest data is deleted from this cube. Run a summary report when you want to look for trends and patterns. Summary reports can look at one day, one week, month-to-date, or an entire month.

There are multiple detail cubes, one per day, and each cube generates an *archive report*. When the hourly updates for the current day archive cube are done, the current day cube becomes yesterday's cube and no other changes are made to it for as long as the cube is retained. Use an archive report when you want to go back in time to see all the sampled data for a single day, for a single hour, or for a single polling interval.

The retention period for data in the summary cube and the Near Real Time (live) cube is not configurable; the retention period for archive data cubes is configurable. The default retention period for archive data is 14 days. To adjust the default, use the Configuration Utility.

Demonstration Data

The Performance SPI includes demonstration data. Reports will populate with demonstration data automatically, by default. But as soon as the iSPI starts, data from NNM will be begin to over-write demonstration data. Over-writing demonstration data takes place in stages. The demonstration data in live reports will be replaced by real data within minutes, while the demonstration data in summary reports will stay there until midnight. After midnight, all summary reports will be populated with data the Performance SPI collected from NNM.

You may reinstall demonstration data any time. Reinstalling demonstration data will temporarily halt certain iSPI processes. But data collection will continue, and as soon as the iSPI is restarted, the halted processes will start back up again and begin processing a backlog of collected data.

Direct Access to the Performance SPI

To access the iSPI directly, without going through the **Actions** menu on the NNM console, point your browser to the following URL:

http://<*Fully-Qualified-Domain-Name*>:9300/PerfSpi/login

When the NNM console login window opens, type your user account name and password and click **Sign In**. After you are authenticated, Cognos Connection opens. From Cognos Connection you can open any report. From any report you can reach the Report Menu by clicking **Show Links**.

Integration with Performance Insight

Integrating the Performance SPI and Performance Insight (PI)—by installing datapipes that collect data from the Performance SPI—is an option. By taking this step you can implement long-term data warehousing, analyze trends in more detail, and create fully-customized reports. Integration is not difficult. Simply follow these steps:

- Enable the HP PI Datapipe option in the Configuration Utility

- Install one or both of these datapipes on PI:

— NNM Performance SPI Datapipe (the datapipe or IR)

— Device Resource Performance SPI Datapipe

Each datapipe collects polled data from the iSPI, summarizes polled data to the hourly level, and exports the results to tables maintained by PI. The datapipe software ships with the Performance SPI. After you install the Performance SPI, you will find a compressed file for both datapipes here:

```
opt/OV/NNMPerformanceSPI/NNMPerfSPI_Datapipe
```

To install the datapipes, copy the compressed file to the Packages directory on your PI server, extract the file, and run Package Manager. You can find more information about datapipe installation and configuration in release notes. Release notes are in the Docs folders under the NNMPerfSPI_Datapipe folder.

Sources for Additional Information

Consult the following HP sources for additional information:

- *NNM iSPI for Performance 8.10 Support Matrix*

- *NNM iSPI for Performance 8.10 Release Notes*

- *NNM Performance SPI Datapipe 1.0 Release Notes*

- *Device Resource NNM Performance SPI Datapipe 1.0 Release Notes*

- NNM iSPI for Performance 8.10 Help

    — Troubleshooting tips

    — Performance SPI utilities

    — Report descriptions and use-case scenarios

- *NNM i-series Software 8.10 Installation Guide*

- *NNM i-series Software Deployment and Migration Guide*

The latest release notes for the iSPI, the latest installation guide for the iSPI, and both of the NNM guides listed above are posted here:

http://h20230.www2.hp.com/selfsolve/manuals

The deployment guide includes a section about configuring NNMi and the Performance SPI for High Availability.

When you install the Performance SPI, the following Cognos documents are copied from the DVD to your system:

- Cognos 8 *Administration and Security Guide*
- Cognos 8 *Getting Started*
- Cognos 8 *Go! Office User Guide*
- Cognos 8 *Troubleshooting Guide.*
- Cognos 8 *Configuration User Guide*
- Cognos Connection *Quick Tour*
- Cognos Connection *User Guide*
- Query Studio *User Guide*
- Query Studio *Quick Tour*

These documents cover many topics, including how to schedule reports, email reports, create ad hoc report queries, and customize reports. After installation you can locate the documents listed above in the following directory on your server:

```
/opt/OV/nonOV/cognos/c8/webcontent/documentation
```

2 Prerequisites

This chapter covers the following topics:

- Platform combinations and file sharing options
- Port access requirements
- Operating system requirements
- Supported web browsers
- iSPI software delivery

Platform Combinations and File Sharing

If you are installing the Performance SPI on a dedicated server, your choice of operating systems is restricted. For example, if NNM is on Windows, you cannot install the iSPI on a server running HP-UX, Solaris, or Linux; and if NNM is on Linux, you cannot install the iSPI on a server running HP-UX or Solaris. Other combinations of Unix are supported. For details about supported platform combinations, see the Performance SPI Support Matrix.

Platform combinations impact file sharing options, as follows:

- When NNM is on Windows, and the iSPI is on Windows, a **Windows Network Share** is enabled on the NNM operating system.

- When NNM is on a UNIX operating system, and the iSPI is on Windows, a **Samba Share** is enabled on the NNM operating system.

- When NNM and the iSPI are on UNIX operating systems, an **NFS Share** is enabled on the NNM operating system.

The Windows Network Share and the Samba Share require user accounts. An NFS share does not require a user account.

Port Access Requirements

Comply with the following port access requirements:

- Port 9300 on the iSPI server must be open.
- Port 1527 on the iSPI server must be open.

Operating System

The requirement is Sun Solaris 10 SPARC.

NNM does not support Solaris on Intel Architecture.

The shared memory must be updated. Using an editor, update the /etc/system entry as follows:

```
set shmsys:shminfo_shmmax=1073741824
```

Web Browser Requirements

You may use these web browsers:

- Internet Explorer 7.0
- Mozilla FireFox 2.0

Additional stipulations:

- Disable any Window Popup Blockers
- Enable cookies
- Set the client display resolution to at least 1024x768

iSPI Software Delivery

If you already have the iSPI installation media (the DVD distributed by HP), there is no software to download. However, even if you have the DVD, it is a good idea to check for updated iSPI software and updated iSPI documentation on the Support web site.

If you do not have the DVD, you can download the iSPI as an ISO image. After downloading the image, you will need to run a mount command. For details, see Appendix C.

3 Same Server Install

This chapter covers the following topics:

- Running the HP Software Installer
- Single Sign-on Security
- Removing the Performance SPI

This chapter applies to you if you are installing the iSPI on the same server with NNM. If you are installing the iSPI on a separate machine, a machine dedicated to the iSPI, follow the procedure in Chapter 4.

Running HP Software Installer

Follow these steps to install the NNM iSPI for Performance.

1 Insert the iSPI installation media in the DVD drive.

2 Use the cd command to change to the /cdrom directory

3 Enter the following command:

    ./HPNNMPerformanceSPI_8.10.000_setup.bin

4 The installation initialization process prompts you for the language you want to use.

5 The installer performs the following pre-install checks:

Verifying system does not have anti-virus software that might impact the installer...

Checking to see if system domain name is set...

Checking to see if system has sufficient memory...

Checking if the system is running 64-bit OS....

If a check does not pass, a warning or error message displays. The text beneath the warning or error spells out what the requirement is and how the check failed. For example, the recommendation for RAM is 4GB; if your system has less than 4GB of RAM, a warning displays. You can continue the installation or quit.

6   HP Software Installer opens. The left panel, shown below, provides a list of steps in the install process.

7   The **Initialization** step lets you select a language. If your system supports multiple languages, you will have multiple choices.

8   Review the overview information on the **Introduction** page and click **Next**.

9   **Product Agreement**. Read the license terms. If you agree with the terms, select **I Accept...** and then click **Next**.

10 **Product Customization**. This page does not open.

11 **Product Requirements**. The following install checks run:

Checking to see if system has sufficient disk space on the data drive...

Checking to see if system has sufficient TEMP disk space for the installation...

Checking to see if system has sufficient installed memory...

Checking to see if system has sufficient free memory...

Checking to see if system has sufficient number of CPUs...

If your system is properly configured, you won't see any warning or error messages. If you see warnings or errors, the warning or error will explain how your system is deficient. If you see a warning, you may continue the installation or quit; if you see an error, the installer forces you to quit.

12 **Pre-Install Summary**. Review your choices. Click **Previous** to make a change. To start the installation, click **Install**.

13 **Installing**. This step will take about one hour, possibly longer, depending on system configuration.

14 **Post-Install**. No response necessary.

When the install completes, you can display a list of time-stamped INFO messages that were logged during the install process. Display these messages by clicking **view log file** in the Install Complete window. (The log file is also available later, after installation.)

If you click the **Details** tab, you will see the following items listed under HP Network Node Manager SPI for Performance (Install):

- HP Embedded Reporting Software BiServer (Install)

- HP Embedded Reporting Software Custom (Install)

- HP Embedded Reporting Software SDK (Install)

- HP Network Node Manager SPI for Performance (Install)

- HP OpenView Perl - V5.8.1 - Package Version 05.08.085 (Install)

- HP OpenView JDK (Install)

- HP OpenView HA (Install)

15 **Install Complete**. Click **Done**. Clicking **Done** is mandatory.

Single Sign-On Security

If your NNM server is already deployed to a production environment, then it is probably configured with a domain name. If your NNM server is still in a test environment, NNM might not be configured with a domain name.

When you installed the iSPI, the installer attempted to establish NNM's fully-qualified domain name, or FQDN. If the installer could not establish the FQDN, because the FQDN was not configured, the HP Software Installer displayed a message advising users to launch NNM using NNM's IP address.

If NNM's domain name was available when the Performance SPI was installed, a security feature known as Single Sign-On was enabled. When SSO is operating, users can move from NNM to a report without having to log in a second time. If NNM's domain name was not available when the Performance SPI was installed, SSO will not function unless users launch NNM using NNM's IP address.

If NNM was not configured with a FQDN when you installed the Performance SPI, we recommend that you run a script as soon as NNM is configured with a FQDN. When the FQDN is configured, navigate to this directory:

    /opt/OV/NNMPerformanceSPI/bin

and run the following enablement script:

nnmsilentenableperfspi.ovpl

After you run this script, any user who launches NNM using NNM's FQDN can move from NNM to a report without logging in a second time.

Removing the Performance SPI

Follow these steps to uninstall the Performance SPI:

1   As root, cd to the following directory:

    /opt/OV/Uninstall/NNMPerformanceSPI

2   Type the following command: **./setup.bin**

3   A welcome page opens. Click **OK**.

4   Wait a few moments while the HP Software Installer initializes. When the
    Initialization page opens, select **Uninstall**.

5   The Pre-Uninstall Summary page opens. Click **Uninstall**.

6   The Uninstalling... page opens, showing a progress bar, and two tabbed
    windows, **Summary** and **Details**.

7   About 20 minutes later, **Uninstallation Complete** appears; click **Done**.

What the Removal Accomplishes

Removing the Performance SPI leads to these results:

- Two services are removed:
    — NNMPerformanceSPI
    — HPErs with Tomcat

- Every folder related to the Performance SPI is removed; no manual file
  clean-up is necessary.

- The Performance SPI license is removed.

- The **Reporting - Report Menu** option is removed from the **Actions** menu.

- Single Sign-On (SSO) Security is disabled.

Verifying a Complete Uninstall

Follow these steps to verify that removal was successful:

1   Confirm that the license file, `PerfSPI.bin`, was deleted from the
    `licensing` folder. The path is:

    `/var/opt/OV/shared/nnm/conf/licensing/PerfSPI.bin`

    If the `PerfSPI.bin` file is still there, the license was not deleted.

2   Navigate to the `final` directory and verify that it does not contain any
    new files. The path is:

    `/var/opt/OV/shared/perfSpi/datafiles/metric/final`

3   Check to see that the `ssoservlet.war` file was deleted. The path is:

    `/opt/OV/nonOV/jboss/nms/server/nms/deploy/ssoservlet.war`

4   Verify that **Reporting - Report Menu** was removed from the **Actions** menu.

4 Dedicated Server Install

The procedures in this chapter apply to a dedicated-server installation only. This chapter covers the following topics:

- Special instructions that apply to Application Failover
- Special instructions that apply to High Availability
- Preliminary data gathering steps
- Running the iSPI enablement script on the NNM server
- Running the HP Software Installer on the iSPI server
- Removing the Performance SPI

Follow the procedure in Chapter 3 if you are installing the iSPI on the same server with NNM.

Application Failover

If you are running NNM in an Application Failover cluster:

1 Run the iSPI enablement script at least twice, once on the active NNM server and once on each standby server in the cluster.

2 When you run the enablement script on the inactive server, provide the same responses you provided when you ran the enablement script on the active server.

3 Later, if you choose to install permanent licenses, be sure to install identical licenses on every server in the cluster.

High Availability

If you are running NNM in a High Availability cluster, run the iSPI enablement script on the active NNM server and on every standby server in the cluster. Respond to enablement script prompts the exact same way each time you run the script.

Except for the differences listed below, the results produced by running the enablement script in an HA environment are identical to the results you get by running it in a non-HA environment. Within an HA environment, the results vary depending on whether the server is active or standby.

HA environment and the server is active:

- Shared disk configuration parameters are written to the HA configuration
- Shared disk space is activated

HA environment and the server is standby:

- Shared disk configuration parameters are written to the HA configuration
- Launch actions are not loaded
- SSO is not configured

Preliminary Steps

Before running the enablement script, follow these steps:

1   Verify that the dedicated server and the NNM server are in the same DNS domain, for example, hp.com. Membership in different sub-domains is allowed, but the parent domain must be the same. For example:

    - nnm.hp.com
    - iSPI.hp.com

2   Be ready to supply the fully-qualified hostname for the iSPI host. The correct format is:

    hostname.domain.com

Running the iSPI Enablement Script

Running the enablement script on the NNM system configures NNM to work with the iSPI installed on a dedicated server. Your responses to the script allow NNM to:

- Install and enable an instant-on license for the iSPI
- Add additional URL launch actions to the Actions menu
- Configure a shared drive with correct permissions
- Enable the Single Sign-On (SSO) security feature

Follow these steps to run the enablement script:

1   As root, at the shell prompt, launch the script:

    `/opt/OV/bin/nnmenableperfspi.ovpl`

2   When prompted, indicate that you are not installing the iSPI on the same system with NNM.

3   When prompted, supply the fully-qualified hostname of the server running the Performance SPI; the script pings the server.

4   The default port is 9300. Accept the default.

5   The script enables an instant-on license and adds launch actions to the NNM Actions menu.

6   The script prompts you to select a filesharing option. Your options are:

    - **NFS Share**. NNM is on HP-UX or Solaris and the iSPI is on Solaris.
    - **Do not enable filesharing for the NNM iSPI for Performance at this time.**

      If you do not configure a share now, automatically, you must configure a share later. You can do that by configuring the share manually or by rerunning this script. The iSPI cannot collect metrics from NNM until filesharing is enabled.

7   The script enables Single Sign-On Security for the Performance SPI.

8   The script displays the following status messages:

    - **License loaded: True**
    - **Actions loaded: True**
    - **Share added: True**

- **New user added: N/A**
- **iSPI Security: True**

9 The enablement script displays:

- Path to the datafiles folder

The iSPI Configuration Utility (this utility opens later, near the end of the installation) will ask you for this path. The path you provide, and the path displayed by the enablement script, must be exactly the same.

You are now ready to install the Performance SPI on a dedicated server.

Running HP Software Installer

Follow these steps to install the Performance SPI on a dedicated server.

1 Insert the iSPI installation media in the DVD drive.

2 Use the **cd** command to change to the /cdrom directory.

3 Enter the following command:

```
./HPNNMPerformanceSPI_8.10.000_setup.bin
```

4 The installation initialization process prompts you for the language you want to use.

5 The following automatic installer checks run:

Verifying system does not have anti-virus software that might impact the installer...

Checking to see if system domain name is set...

Checking to see if system has sufficient memory...

Checking if the system is running 64-bit OS....

If a check does not pass, a warning or error message displays. The text beneath the warning or error explains what the requirement is and how the check failed. For example, the recommendation for RAM is 4GB; if your system has less than 4GB of RAM, a warning displays. At this point in the process, you can continue with the installation or you can quit. Unless you want to quit, click **Next**.

6   HP Software Installer opens. The left panel, shown below, outlines the
    steps in the install process.

7   The **Initialization** page lets you select a language. If your system supports
    multiple languages, you will have multiple choices.

8   Review the overview information on the **Introduction** page and click **Next**.

9   **Product Agreement**. Read the license terms. If you agree with the terms,
    select **I Accept...** and then click **Next**.

10 **Product Customization**. This window shows two defaults.

    The default installation directory:

    ```
    /opt/OV
    ```

The default data directory:

```
/var/opt/OV
```

a If a high-volume storage array is available, verify that the default data directory is pointing to the high-volume storage array.

b When you are done, click **Next**.

11 **Product Requirements**. The following installer checks run automatically:

Checking to see if system has sufficient disk space on the data drive...

Checking to see if system has sufficient TEMP disk space for the installation...

Checking to see if system has sufficient installed memory...

Checking to see if system has sufficient free memory...

Checking to see if system has sufficient number of CPUs...

If your system is properly configured, you won't see any warning or error messages. If you see warnings or errors, the warning or error will explain how your system is deficient. If you see a warning, you may continue the installation or quit; if you see an error, the installer forces you to quit.

12 **Pre-Install Summary**. Review your choices. Click **Previous** to make a change. To start the installation, click **Install**.

13 **Installing**. Depending on your system's configuration, this step will take about one hour, possibly longer.

14 **Post-Install**. The NNM iSPI for Performance Configuration window opens.

Follow these steps:

a Specify the path to the datafiles directory on NNM. Include the system name and the directory. (The enablement script displayed the Account Name and the path to the datafiles directory.)

b   If you want to collect iSPI metrics for the Interface Reporting Report Pack, click the box next to **Enable HP PI Datapipe**.
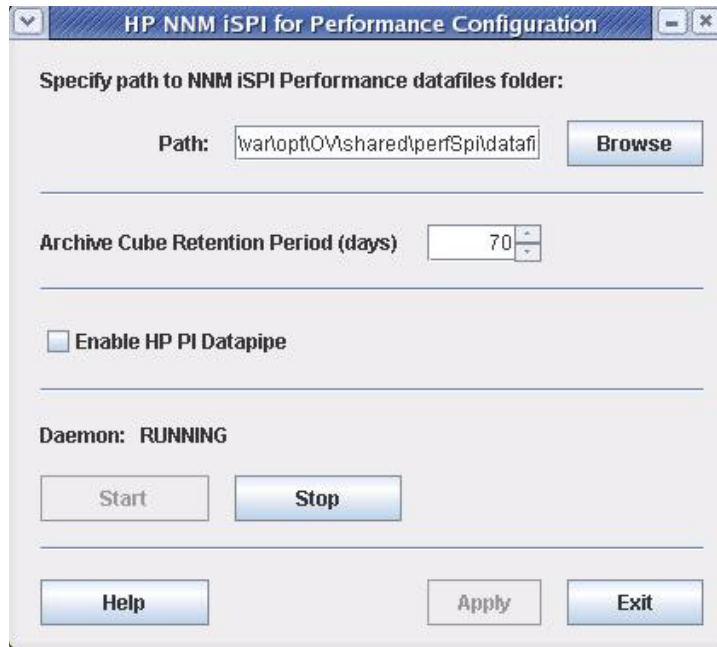
c   Click **Apply**. Clicking Apply writes the NNM directory to the iSPI configuration file.

d   If you want to start the iSPI, click **Start**.

▶   Starting the iSPI enables data collection from NNM. The data the iSPI collects from NNM will begin to over-write existing demo data. Over-writing demo data takes place in stages.

e   Click **Exit** to close the form.

15 **Install Complete.** Clicking **view log file** displays a list of INFO messages. Clicking **Details** displays the following items under **HP Network Node Manager SPI for Performance (Install):**

HP Embedded Reporting Software BiServer (Install)

HP Embedded Reporting Software Custom (Install)

HP Embedded Reporting Software SDK (Install)

HP Network Node Manager SPI for Performance (Install)

HP OpenView Perl - V5.8.1 - Package Version 05.08.085 (Install)

HP OpenView JDK (Install)

HP OpenView HA (Install)

16   Click **Done**. Clicking **Done** is mandatory.

Removing the Performance SPI

Follow these steps to remove the Performance SPI:

1   As root, cd to the following directory:

`/opt/OV/Uninstall/NNMPerformanceSPI`

2   Type the following command: **`./setup.bin`**

3   A welcome page opens. Click **OK**.

4   Wait a few moments while the HP Software Installer initializes. When the Initialization page opens, select **Uninstall**.

5   The Pre-Uninstall Summary page opens. Click **Uninstall**.

6   The Uninstalling... page opens, showing a progress bar, and two tabbed windows, **Summary** and **Details**.

7   About 20 minutes later, **Uninstallation Complete** appears; click **Done**.

What the Removal Accomplishes

Removing the Performance SPI yields these results:

- Two services are removed:
  - NNMPerformanceSPI
  - HPErs with Tomcat

- Every folder related to the Performance SPI is removed; no manual file clean-up is necessary.

The uninstall utility will not remove the PerfSPI license, it will not remove the reporting option (**Reporting - Report Menu**) from the **Actions** menu, and it will not disable SSO. To remove the license, remove the reporting option, and disable SSO, run the following command on the NNM server:

/opt/OV/bin/nnmdisableperfspi.ovpl

Verifying a Complete Uninstall

Follow these steps to verify a successful removal:

1   Confirm that the license file (PerfSPI.bin) was deleted from the licensing folder. The path is:

/var/opt/OV/shared/nnm/conf/licensing/PerfSPI.bin

If the PerfSPI.bin file is still there, the license was not deleted.

2   Navigate to the final directory and verify that it does not contain any new files. The path is:

/var/opt/OV/shared/perfSpi/datafiles/metric/final

3   Check to see that the ssoservlet.war file was deleted. The path is:

/opt/OV/nonOV/jboss/nms/server/nms/deploy/ssoservlet.war

4   Verify that **Reporting - Report Menu** was removed from the **Actions** menu.

5 Getting Started

This chapter covers the following topics:

- Launching the Performance SPI
- Verifying that the iSPI is operating without errors
- Changing the defaults for performance polling
- Setting thresholds for exceptions
- Changing the password for Cognos (ErsAdmin)
- Preparing for NNMi Application Failover

Launching the Performance SPI

You can launch the Performance SPI from:

- The NNM console
- Cognos Connection

Launching from the NNM Console

1   Enter the following URL into a web browser window:

    http://<fully-qualified-domain-name>:<port>/nnm/

    where *fully-qualified-domain-name* is the fully-qualified domain name of
    the NNMi management server, and *port* is the port used by the jboss
    application server to communicate with the NNMi console.

2   When the NNM console login window opens, type your user account name
    and password and click **Sign In**.

3   When the NNM Console opens, select **Actions > Reporting - Report Menu**

The Performance SPI report menu opens.

Launching from Cognos Connection

1   Point your browser to the following URL:

http://<*fully-qualified-domain-name*>:9300/PerfSpi/login

2   When the NNM console login window opens, type your user account name and password and click **Sign In**.

3   Cognos Connection opens. From Cognos Connection you can open any report. From any report you can reach the Report Menu by clicking **Show Links**.

Verify Error-Free Operation

To verify that the iSPI is operating without errors, perform these tasks:

- Task 1: Locate iSPI application files and iSPI runtime files.
- Task 2: Verify valid entries in the configuration file.
- Task 3: Use the Configuration Utility to verify iSPI configuration.
- Task 4: Use the Log File Monitor to view incoming messages.
- Task 5: Use the Log File Analyzer to see summaries of errors and warnings on a process-by-process basis.
- Task 6: Use the iSPI Diagnostics reports to monitor disk space usage and trends related to process execution.

Task 1:   Locating Application Files and Runtime Files

iSPI software consists of static application software files (binaries) and dynamic runtime files. The default path for static application software is:

```
/opt/OV
```

The **NNMPerformanceSPI** directory contains the following folders:

- `bin`

- config
- Docs
- Installation
- java
- L10N
- lib
- NNMPerfSPI_Datapipe
- sample
- SHS

The default path to the dynamic runtime files is:

    /var/opt/OV

The **NNMPerformanceSPI** directory contains the following folders:

- contentstore
- InterfaceHealth
- NodeHealth
- logs
- PerfSPIDiagnostics
- rconfig

Task 2:   Validating the Configuration File

The configuration checker verifies that the main configuration file contains valid entries. To launch the configuration checker:

- cd to the following directory:

    /opt/OV/NNMPerformanceSPI/bin

- Type the following command:

    ./checkConfig.ovpl

If everything is okay, the checker displays the following message:

    INFO: configuration file validated OK

Task 3:   Using the iSPI Configuration Utility

Use the Configuration Utility to change the following parameters:

- Path to the NNM datafiles folder
- Data retention
- Status of the HP PI Datapipe

To make any of these changes, follow these steps:

1   Launch the Configuration Utility.

  - cd to the following directory: /opt/OV/NNMPerformanceSPI/bin
  - Type the following command: ./RunConfigurationGUI.ovpl

2   Click **Stop**. (Clicking **Stop** stops metric processing and cube creation; it does not stop the iSPI from collecting data from NNM.)

3   Make any of these changes:

  - Change the path to the shared NNM datafiles directory
  - Modify the default retention period for archive cube data:
      — Default = 14 days
      — Max retention period = 70 days
  - Enable the HP PI Datapipe

4   Click **Apply**.

5   Click **Start**.

6   Click **Exit**.

The system will not read your changes until you restart. Under certain circumstances (for example, a shared file system is not ready), you may be required to delay restarting.

If you enable the datapipe option, the iSPI moves processed data to a special directory for data awaiting delivery to a Performance Insight server. There are two datapipes, one for Interface Reporting and one for Device Resource. Your next step, if you enable the datapipe option, is to install one or both datapipes on PI. For details about datapipe installation and how to add FTP server details to a process file on PI, see the release notes for each datapipe.

Task 4: Using the Log File Monitor

The log file monitor is Chainsaw. Using Chainsaw, you can monitor DEBUG, INFO, WARN, and ERROR messages as they reach the prspi.log directory. The perfspi.log directory contains every message generated since last night at midnight. The path to prspi.log is:

```
/opt/OV/NNMPerformanceSPI/logs/prspi.log
```

Follow these steps to verify that the iSPI is running without errors.

1   Open the Log File Monitor.

   •   cd to the following directory: `/var/opt/OV/NNMPerformanceSPI/bin`

   •   Type the following command: `./RunChainsaw.ovpl`

2   The welcome page includes several tabs. Select the message interface tab (the path to perfspi.log). This view includes three panes:

   •   Event pane — top center

   •   Detail event pane — below the Event pane

   •   Tree logger pane — to the left of the Event pane

   The event pane is constantly changing, showing the most recent message as it arrives in prspi.log, and additional information about that message in the detail event pane.

3   Open the Interface Health folder and watch for WARN or ERROR messages generated by loggers.

4   Open the Component Health folder and watch for WARN or ERROR messages generated by loggers.

▶   If the logfile is truncated and archived, Chainsaw may stop scrolling messages. If this happens, restart Chainsaw.

Task 5: Using the Log File Analyzer

Use the Log File Analyzer to display:

•   A daily summary of warnings produced by processes within each extension package

•   A daily summary of errors produced by processes within each extension package

- Timing data for selected processes within each extension package

Follow these steps:

1 Open the Log File Analyzer:

    - cd to the following directory: `/opt/OV/NNMPerformanceSPI/bin`

    - Type the following command: `./log_analyzer.ovpl`

2 Review warnings and errors.

    The summary data for warnings and errors covers the previous two weeks. The last summary, covering today, will be incomplete. The summary data indicates:

    - Date

    - Number of errors per process, if any

    - Number of warnings per process, if any

    A warning normally indicates a transient condition, usually a temporary mismatch, that will self-correct. If you see a warning message or an error message, you may want to examine it in more detail by viewing the associated logfile in a text editor.

3 Scroll down past the summary of warnings and errors to see timing data. Timing data shows:

    - Total number of times a process executed over the previous two weeks

    - Average execution time per process over the previous two weeks

    - Standard deviation

    - Maximum execution time per process over the previous two weeks

    - Average number of records processed per execution

    - Average number of records processed per second

Task 6:   Using the Diagnostic Reports

The iSPI Diagnostics extension pack contains five reports:

- Node Count (Cumulative vs. Current)

- Disk Space Free

- Element Count (Cumulative)

- Process Duration Detail

- Process Duration Top 10

These reports monitor trends related to disk space usage and the duration of iSPI processes. For details about report contents, see online help.

Changing the Defaults for Performance Polling

When you install the iSPI, some performance polling is enabled for you, automatically. If your polling requirements are different from the defaults, the defaults must be changed. Changing the defaults is an NNM console task.

To change the performance polling defaults for a node group, use the Node Settings form. To access this form from the NNM console, select:

Workspaces > Configuration > Monitoring Configuration > Node Settings

If you need help changing performance polling defaults, refer to the following help topic in the Administration section of online help for the iSPI:

Setting Performance Polling in NNMi

Setting Thresholds for Exceptions

Although several iSPI reports monitor exceptions, data about exceptions will be missing from these reports until thresholds for performance metrics are set in NNM. There are no default thresholds, so no thresholds will be set for you automatically. Setting thresholds is a manual step.

To avoid generating too many exceptions, or too many incidents related to threshold conditions, set thresholds that will flag *abnormal* behavior. You can develop a better understanding of abnormal behavior by studying variance in iSPI reports.

When you are ready to set thresholds, use the **Threshold Settings** tab on the **Node Settings** form. If you need help with this task, refer to the following topic in the Administration section of online help for the iSPI:

Setting Thresholds in NNM

Changing the Admin Password for Cognos

We recommend changing the default password for Cognos promptly, soon after installation. Follow these steps:

1   Navigate to this directory: `/opt/OV/ers/bin`

2   Type the following command, followed by your new password:

    ./HpErsSetAdmnPassword <*newpassword*>

3   The system displays the following message:

    ErsAdmin password set successfully.

    $OV_INST_DIR/NNMPerformanceSPI/bin/startERS.ovpl

Preparing for Application Failover

Application Failover for NNMi ensures redundancy by allowing a secondary NNMi server to take over immediately after a primary NNMi server fails. Application Failover relies on jboss clustering technology, a shared certificate that must be copied from NNM to the Performance SPI, and ongoing file system synchronization.

Except for a minor service interruption lasting about 15 minutes, Application Failover is transparent. Users will not notice that a failover took place and there are no special tasks for the iSPI administrator to perform.

The ability of the Performance SPI to support application failover depends on files the Performance SPI retrieves from the primary server in the cluster. As soon as the Performance SPI has these files, it begins monitoring the status of the primary server by checking for status changes every 5 minutes. If the Performance SPI detects a status change, the Performance SPI:

• Determines which server in the cluster is the new primary server

• Redirects data collection to a shared directory on the new primary server

• Begins collecting data (metrics and topology files) from the new primary

Immediately after these events take place, iSPI users will be able to link from the iSPI to NNM views on the new primary server, just as they were able to do before the failover took place.

Prerequisites for Successful Application Failover

Application Failover will succeed if the following prerequisites are met:

- Configure NNMi the same way on each server in the cluster.
- Run the Performance SPI enablement script on every server in the cluster.
- Each time you run the enablement script, respond to enablement script prompts exactly the same way and establish the same path to the datafiles folder.
- Copy a certificate (a java keystore file) from NNM to the Performance SPI.

Copying the Keystore File from NNM to the Performance SPI

Follow these steps to copy the cluster.keystore certificate from NNM to the Performance SPI:

1   Navigate to the cluster.keystore file on NNM:

NNM on Windows

```
%NnmDataDir%\shared\nnm\conf\nnmcluster\cluster.keystore
```

NNM on UNIX

```
/var/opt/ov/shared/nnm/conf/nnmcluster/cluster.keystore
```

2   Copy cluster.keystore to the following directory on the Performance SPI:

```
var/opt/OV/NNMPerformanceSPI/nnmappfailover/keystore
```

> The keystore enables access to the NNM cluster. We recommend using a secure copy mechanism, such as SCP or USB key.

3   At the command line, run the following script:

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

6 Licensing

To obtain a permanent license, acquire a password for a permanent license and then install the license password using Autopass License Management. Install the license password on the NNM server, not the iSPI server, even if the iSPI is installed on a dedicated server.

Node Count Considerations

The node count permitted by your permanent license for the iSPI must equal the node count permitted by your permanent license for NNM. If there is a mismatch, you will see messages indicating that a mismatch was detected.

Follow these steps to determine the type of license that NNM is using, and how many nodes NNM is currently managing:

1   In the NNM console, click **Help > About Network Node Manager**.

2   Click **View Licensing Information** to see the type of license.

3   Click **Database Object Counts** to see how many nodes are being polled.

Acquiring a Permanent License for the iSPI

Follow these steps to acquire a permanent license for the iSPI:

1   Gather the following information:

   a   HP product number and order number (these numbers are on the Entitlement Certificate)

   b   IP address of the NNM management server

c   Your company or organization information

2   At a command prompt, run the following command:

```
/opt/OV/bin/nnmlicense.ovpl NNM -g
```

3   The Autopass License Management window opens. In the **License Password** dialog box, click **Request License**.

4   Install the license password by following the instructions in the window.

5   Update your system, and store your license data files, by opening a command prompt and running this command:

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

Acquiring Additional License Passwords for the iSPI

Contact your HP Sales Representative or your Authorized Hewlett-Packard Reseller for information about the NNM licensing structure and to learn how to add license tiers for enterprise installations.

To obtain additional license passwords, go to the HP password delivery service:

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

Restrictions Regarding Cognos Software

Cognos BI Software is licensed under an OEM arrangement between HP and Cognos Incorporated. The following restrictions apply to Cognos BI Software:

- You cannot have more than one Administrator at one time.

- You cannot have more than 5 simultaneous users of Query Studio.

- You cannot extend the iSPI data model, or add additional data sources to the iSPI system.

A   Metrics Per Extension Pack

Appendix A provides a list of the metrics found in two extension packs:

- Interface Health
- Component Health

Interface Health Extension Pack

Volume in Packets

- Packets In
- Packets Out

Volume in Bytes

- Bytes In
- Bytes Out

Utilization

- Utilization (Avg%)
- Utilization In (Avg%)
- Utilization Out (Avg%)
- Utilization (Max%)
- Utilization In (Max%)
- Utilization Out (Max%)

- Utilization (Variance)
- Utilization In (Variance)
- Utilization Out (Variance)
- Utilization Exceptions (% samples)
- Utilization Exceptions (# samples)

Discards

- Discards (Avg%)
- Discard Rate In (Avg%)
- Discard Rate Out (Avg%)
- Discards (Max%)
- Discard Rate In (Max%)
- Discard Rate Out (Max%)
- Discard Exceptions (% samples)
- Discard Exceptions (# samples)
- Discards (Total)
- Discards In
- Discards Out
- Discard Rate (Variance)
- Discard Rate In (Variance)
- Discard Rate Out (Variance)

Errors

- Errors (Avg%)
- Error Rate In (Avg%)
- Error Rate Out (Avg%)
- Errors (Max%
- Error Rate In (Max%)

- Error Rate Out (Max%)
- Error Exceptions (#samples)
- Error Exceptions (% samples)
- Errors (Total)
- Errors In
- Errors Out
- Error Rate (Variance)
- Error Rate In (Variance)
- Error Rate Out (Variance)

Availability

- Availability (Avg%)
- Availability Exceptions (% samples)
- Availability Exceptions (# samples)

Response Time

6 Response Time (Avg msec)

7 Response Time (Variance)

Period Length (sec)

SampleCount

Component Health Extension Pack

Memory Utilization

- Memory Utilization (Avg%)
- Memory Utilization (Max%)
- Memory Utilization Exceptions (Avg%)
- Memory Utilization Exceptions (#samples)

Buffer Utilization

- Buffer Utilization (Avg%)
- Buffer Utilization (Max%)
- Buffer Utilization Exceptions (Avg%)
- Buffer Utilization Exceptions (#samples)

Buffer Miss Rate

- Buffer Miss Rate (Avg%)
- Buffer Miss Rate (Max%)
- Buffer Miss Rate Exceptions (Avg%)
- Buffer Miss Rate Exceptions (#samples)

Buffer Failure Rate

- Buffer Failure Rate (Avg%)
- Buffer Failure Rate (Max%)
- Buffer Failure Rate Exceptions (Avg%)
- Buffer Failure Rate Exceptions (#samples)

CPU Utilization

- CPU Utilization (Avg%)
- CPU Utilization (Max%)
- CPU Utilization Exceptions (Avg%)
- CPU Utilization Exceptions (#samples)

CPU 5s Utilization

- CPU 5s Utilization (Avg%)
- CPU 5s Utilization (Max%)
- CPU 5s Utilization Exceptions (Avg%)
- CPU 5s Utilization Exceptions (#samples)

CPU 1m Utilization

- CPU 5m Utilization (Avg%)
- CPU 5m Utilization (Max%)
- CPU 5m Utilization Exceptions (Avg%)
- CPU 5m Utilization Exceptions (#samples)

CPU 5m Utilization

- CPU 5m Utilization (Avg%)
- CPU 5m Utilization (Max%)
- CPU 5m Utilization Exceptions (Avg%)
- CPU 5m Utilization Exceptions (#samples)

Response Time

- Response Time (Avg msec)
- Response Time (Max msec)

Period Length (sec)

SampleCount

- SampleCount (All)
- SampleCount (Memory)
- SampleCount (Buffers)
- SampleCount (CPU)
- SampleCount (Buffer Miss)
- SampleCount (Buffer Failure)
- SampleCount (Buffer NoMem)
- SampleCount (CPU 5s)
- SampleCount (CPU 1m)
- SampleCount (CPU 5m)

NodeCount

ComponentCount

B Runtime Warnings and Errors

Runtime warnings and errors are sorted alphabetically by the text in column 2, message text. The column on the right explains what the message means and how to respond.

Severity	Message	Explanation/Action Required
Warning	`<PROCESS> terminated with signal: <SIGNAL>`	A process was terminated by a signal (kill).
Error	`Cannot backup samples.tar.gz to samples.tar.gz.1: <SYSERROR>`	Examine the system error message to determine the reason for failing. Likely possibilities are lack of disk space or lack of access rights on source or destination files/directories.
Error	`Checksum error, file <FILE> ignored`	If this error occurs for all files, the iSPI is unable to consume the files created by the NNM state poller and bus adaptor. If this occurs sporadically, for some files, it probably means that files are being corrupted during reading or writing. Investigate further.
Error	`Configuration: <CONFIGITEM> not defined.`	This error should not occur unless the default configuration file has been modified. Replace the default or add the specified item to the config file: `/opt/OV/NNMPerformanceSPI/config/ NNMPerformanceSPI.cfg`
Error	`Configuration: <CONFIGITEM> value must be a valid file in <FILE>. Invalid value: <CONFIGVALUE>`	Make sure that the file exists.
Error	`Configuration: <CONFIGITEM> value must be a valid path. Invalid value: <CONFIGVALUE>`	Make sure that the path exists.
Error	`Configuration: <CONFIGITEM> value must be numeric. Invalid value: <CONFIGVALUE>`	This error should not occur unless the default configuration file has been modified. Replace the default or ensure the specified item in the config file is numeric: `/opt/OV/NNMPerformanceSPI/config/ NNMPerformanceSPI.cfg`
Error	`Configuration: directory <DIR> does not exist`	Create the required directory.
Error	`Configuration: directory <DIR> must have write access`	Change the permissions on the directory.
Error	`Configuration: Model file <MODELFILE> must have read-write access permission`	Change the permissions on the file.

Error	`Configuration: perl not found in 'perl_dir' (<DIR>)`	The location of perl is configured during install. Either the configuration has been modified, or the install failed, or the location of perl has been modified.
Error	`Configuration: PRSPI_MAXFACTDELAY (<NUM>) must be less than fact file retention PRSPI_KeepFactFiles (<NUM>)`	This error should not occur unless the default configuration file has been edited. Replace the default or add the specified item to the config file: `/opt/OV/NNMPerformanceSPI/config/ NNMPerformanceSPI.cfg`
Error	`Cube build & restore/retry attempt failed`	Look for associated messages for more details.
Error	`cube swap failed: <CUBENAME>`	The Cognos utility failed. Examine the error messages for more information.
Warning	`Data transfer to OVPI terminated`	Look for associated messages for more details.
Warning	`Empty file <FILE> ignored`	An empty file has been produced by NNM. If this happens consistently, look at NNM to determine the cause.
Warning	`Failed archiving logfile`	Look for associated messages for more details.
Error	`Failed chdir <DIR> <SYSERR>`	Examine the system error message to determine the reason for failing. Either the directory does not exist or the access rights are not set properly.
Error	`Failed chmod <FILE> <SYSERROR>`	Examine the system error message to determine the reason for failing. Either the directory does not exist or the access rights are not set properly.
Error	`Failed closing <FILE>: <SYSERROR>`	Examine the system error message to determine the reason for failing.
Error	`Failed copying <SOURCE> to <DEST>: <SYSERROR>`	Examine the system error message to determine the reason for failing. You may have insufficient disk space, or it is also possible that the access rights for source or destination files/directories are not set properly.
Error	`Failed creating <FILE>: <SYSERROR>`	Examine the system error message to determine the reason for failing. Lack of access rights is the mostly likely cause.
Error	`Failed deleting <FILE>: <SYSERROR>`	Examine the system error message to determine the reason for failing. Lack of access rights is the most likely cause.

Error	`Failed forking: <SYSERROR>`	Examine the system error for further reasons. The system may be low on resources.
Error	`Failed launching process: <PROCESSNAME>`	Examine the system error for further reasons. The system may be low on resources.
Error	`Failed moving <SOURCE> to <DEST>: <SYSERROR>`	Examine the system error message to determine the reason for failing. Lack of access rights on source or destination files/directories is the most likely cause.
Error	`Failed opening <FILE>: <SYSERROR>`	Examine the system error message to determine the reason for failing. Lack of access rights on file or directory is the most likely cause.
Warning	`Failed restoring cube, no cubes deployed`	Look for associated messages for more details.
Error	`Failed to find pid=-2 in <FILE>`	The ID 2 is written to all files to indicate an unknown interface. If it is missing, the process that wrote this file has failed, or the file has been corrupted.
Error	`Failed truncating <FILE>: <SYSERROR>`	Examine the system error message to determine the reason for failing. Lack of access rights on file or directory is the most likely cause.
Warning	`File not found: <FILE>`	The required file cannot be found. Create the file.
Error	`Found <NUM> in hour <HOUR>, max=4`	More than four quarters were found in the specified hour.
Warning	`Group topology error, <ID> not found`	A non-existent interface or node is referenced in a group. If this occurs consistently, it indicate a problem with NNM topology feeds.
Error	`Hourly summary failed`	Look for associated messages for more details.
Warning	`No topology received from NNM`	A topology request was made. This warning should cease when the topology is received.
Error	`Not yet ported to UNIX`	Highly unlikely that you will be able to install the iSPI on a UNIX system, but just in case.
Error	`pcoptimizer failed with error code: <ERRORCODE>`	The Cognos utility failed. Examine the error messages for more information.
Error	`Please fix configuration file errors and restart process.`	The configuration errors are listed in front of this message.

Warning	`Received signal: <SIGNAL> exiting after current task completed`	A single kill signal has been received by a process which is in the middle of a loop iteration. The process will exit when this iteration completes. Send a second kill to exit immediately.
Warning	`There is no nnm_details.xml file in <DIR>`	Run the NNM enablement script.
Warning	`Topology error: <ID> not found`	A topology request was made and this error should stop occurring when NNM responds with a topology dump.

C Errors Related to Application Failover

The following table provides a list of INFO, WARN, and ERROR messages related to Application Failover.

Message	Comments
INFO: NNM Application Failover is not enabled.	Failover not enabled. This message is logged every 5 minutes.
INFO: NNM Application Failover is enabled. Checking if active node has changed.	Failover enabled.
INFO: NNM Hostname currently used by iSPI is: $nnm_current	Failover enabled. Logged every 5 minutes. Displays current NNM hostname being used by the iSPI.
INFO: $getNNMActiveScript reports active nnm node is: $nnm_active	Failover enabled. Logged every 5 minutes. Displays NNM hostname reported as the active node in the cluster.
INFO: Active NNM host is unchanged.	Failover enabled but the active host has not changed. Logged every 5 minutes.
INFO: Changing iSPI configuration to use $nnm_active	Failover enabled. A configuration update is imminent. This message is logged only when the active node is different from the node currently used by the iSPI.
INFO: Configuration updated. Path to NNM is now $newpath	Failover enabled and config files successfully updated. Logged after the configuration file is successfully updated in response to an application failover.

Message	Comments
WARN: NNM Application Failover is not supported on same-system NNM/iSPI installations	Failover enabled but the NNM hostname is not in the path syntax. If the iSPI is running on the same machine as NNM, the path does not contain the hostname.
WARN: Cannot extract remote nnm hostname from value of PRSPI_NNMDIR ($cfg{PRSPI_NNMDIR})	Failover enabled but the NNM hostname is not in the path syntax. The user may have specified the path in a non-conventional way (for example, by using a hard mount or drive mapping). If the path does not contain the remote NNM hostname, the Performance SPI will be unable to detect application failover
WARN: Expected PRSPI_NNMDIR of form /net/hostname/var... or //hostname/PerfSpi	Failover enabled but the NNM hostname is not in the path syntax. The user may have specified the path in a non-conventional way (for example, by using a hard mount or drive mapping). If the path does not contain the remote NNM hostname, the Performance SPI will be unable to detect application failover.
ERROR: nnm_details.xml not found in $newpath	Failover enabled but the nnm_details.xml file is not available. This message is logged if there is no copy of nnm_details.xml on the remote NNM machine.
	This condition will arise if: (1) the nnmenableperfspi script was not run on that machine, or (2) the machine configurations are not identical. For example, if the pathnames to the shared drive are not identical, the new path will be incorrect when the iSPI substitutes the new hostname into the path. *The machine configurations must be identical*.
ERROR: Unable to modify timestamp of $newpath/nnm_details.xml: $!.	Failover enabled, but there is a file permissions error. The iSPI configuration will not change; a file permissions error is preventing the nnm_detail.xml file from being modified on the NNM server.
ERROR: Unable to write changes to config file. Will try again next time.	Failover enabled, but unable to update the config file. Failure to update the config file could be caused by another process that is locking the config file.

D Mounting an ISO Image

If you do not have the Performance SPI on a DVD distributed by HP, you can download an ISO image from HP. After you download the file, mount the image to a drive or burn your own DVD. On UNIX platforms, follow the steps below to use the image directly from your hard drive without burning a physical disc.

HP-UX

To mount an ISO, create a logical volume from the image:

1   Determine the size required for the logical volume.

    du -k HPUX_PerfSPI_T4906-15002.iso

    Use the result to determine the value for the -L parameter below. Note that output of **du** is in Kb, while the parameter is in Mb.

2   Create a logical volume.

    lvcreate -L 2073 -n ISOLV /dev/vg00

3   Copy the content of the image to the logical volume.

    dd if=/HPUX_PerfSPI_T4906-15002.iso of=/dev/vg00/rISOLV bs=64k

    ▶   *rISOLV* is not a typo. You must use the raw device.

4   Make a mount point to mount the logical volume.

    mkdir /isoImage

5   Mount the logical volume.

    mount /dev/vg00/ISOLV /isoImage

You should now see the content of the DVD under the directory /isoImage.

Linux

To mount:

```
mount -o loop pathToIso mountPoint
```

To unmount:

```
umount mountPoint
```

Solaris

To mount:

```
lofiadm -a pathToIso
mount -F hsfs -o ro /dev/lofi/1 mountPoint
```

To unmount:

```
umount mountPoint
```

E   Performing a Silent Install

To perform a silent install on an unattended system, you need an initialization
file that contains the correct parameters. An initialization file with the correct
parameters is created when you do a normal install. You also have the option
of creating your own initialization file using the following template:

```
[NONOV.OvTomcatA]
ShutdownPort=8005
Jk2Ajp13Port=8009

[installer.properties]
setup=HPNNMPerformanceSPI
licenseAgreement=true
group=Default
appRevision=8.10.000
tempDir=/var/tmp/
customFeatureSelected=NNMPerfSPI
installDir=/opt/OV/
customLangSelected= en
dataDir=/var/opt/OV/
systemDir=/usr/local/bin
appDescription=HP NNM iSPI for Performance
systemLocale=English
```

Using the ini File You Created

► The tempDir= and dataDir= parameters are wrapping; if you create your own initialization file, be sure to unwrap those lines.

Follow these steps to run a silent install:

1   Log in to the target system as administrator.

2   Using the template, create your own ini file and give it this name:

    `ovinstallparams.ini`

3   Copy the file to the `/var/tmp` folder on the target system.

4   Insert the iSPI DVD in the DVD-ROM drive on the target system and enter the following command at the command prompt:

    <DVD_drive>`/HPNNMPerformanceSPI_8.10.000_setup.bin -i silent`

5   The silent install begins. There is no progress indicator.

6   To confirm a successful install, check the latest installation log file.

    a   Navigate to:

    `/var/tmp/HPOvInstaller/HPNNMPerformanceSPI_8.10.000`

    b   Open this file:

`HPNNMPerformanceSPI_8.10.000_`*<time_stamp>*`_HPOvInstallerLog.txt`

    c   If the install was successful, the last line is *Successfully completed*.

Using the Source System ini File

If you installed the iSPI using HP Software Installer, your responses to installation questions were stored in this file:

    `ovinstallparams`*<time_stamp>*`.ini`

The path to the ini file is:

`/var/tmp/HPOvInstaller/HPNNMPerformanceSPI_8.10.000`

Follow these steps to run a silent install:

1   Login to the target system as administrator.

2   Copy the `ovinstallparams<`*`time_stamp`*`>.ini` file from the source system to the`/var/tmp` folder on the target system.

3   Remove the time stamp from the file name; change the file name to:

    `ovinstallparams.ini`

4   Insert the iSPI DVD in the DVD-ROM drive on the target system and enter the following command at the command prompt:

    `<DVD_drive>``/HPNNMPerformanceSPI_8.10.000_setup.bin -i silent`

5   The silent install begins. There is no progress indicator.

6   To confirm a successful install, check the latest installation log file.

    a   Navigate to:

    `/var/tmp/HPOvInstaller/HPNNMPerformanceSPI_8.10.000`

    b   Open this file:

`HPNNMPerformanceSPI_8.10.000_`*`<time_stamp>`*`_HPOvInstallerLog.txt`

    c   If the install was successful, the last line is *Successfully completed*.

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